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CONFLICT AND COOPERATION IN EAST-WEST CRISES:
MEASUREMENT AND PREDICTION

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SUMMARY

CONFLICT AND COOPERATION IN EAST-WEST CRISES: MEASUREMENT AND PREDICTION

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The study measures conflict and cooperation intensity between members of the North Atlantic Treaty Organization (NATO) and members of the Warsaw Treaty Organization (WTO) during the Berlin crisis of 1961, and during the Cuban crisis of 1962. The author attempts to predict actions at particular times during the crises based on the composition and intensity of earlier actions.

Measurement of Conflict and Cooperation. The author coded actions by NATO and WTO members for actor (party initiating the action) and target (party at which the action was directed). He assigned each action to one of 33 categories organized around two cross-cutting dichotomies: conflict-cooperation and verbal-non-verbal (or "words-deeds"). Examples of "words" are demands and offers; examples of "deeds" are the use of military force and the carrying out of agreements. Verbal actions were classified into three sub-categories:

1. The actor's evaluation or perception of past or current action by the target (e.g., disapproval, approval).
2. The actor's desire for future action by the target (e.g., demands, proposals).
3. The actor's intent regarding its own possible action vis-à-vis the target (e.g., threats, promises).

These three verbal sub-categories represent three levels of commitment to deeds or probability that the actor's words will be followed by related deeds. The classification system yields eight major action categories: evaluation, desire, intent, and deeds for both conflict and cooperation.

The author also assigned each action to one of six "resource-areas" (e.g., military, political), indicating what type of resource was used as a basis of influence by the actor.

The study uses conflict and cooperation intensity ratio scales constructed from questionnaires which the author gave to academic, government, and military experts in international relations. Using the scales, the author assigned a conflict or cooperation intensity to each action included in the study. For NATO and WTO, the author plotted the daily intensity for each of the eight action categories during the Berlin and Cuban crises.

Comparison of the Berlin and Cuban Crises. The author divided the Berlin and Cuban crises into five phases, based on changes in the composition and intensity of conflict and cooperation: pre-crisis, intensification, peak, reduction, and post-crisis. For both crises, conflict intensity was highest in the peak phase, moderate during intensification and reduction, and lowest in the pre- and post-crisis phases. The peak phase of the Cuban crisis was half as long as that of Berlin, and three times higher in average daily conflict intensity.

For Berlin, conflictive words were higher in intensity than conflictive deeds during most of the crisis. During most of the Cuban crisis, however, conflictive deeds were higher in intensity than conflictive words.

For Berlin, 59% of the actions were in the political resource-area; 39% were in the military area. In contrast, only 12% of the actions during the Cuban crisis were political, while 84% were military. The Berlin crisis was largely a political confrontation in which both sides tried to justify their political positions with words. The Cuban crisis was primarily a military confrontation in which, for the Soviet Union, it was important not to publicize military preparations with words.

Efforts by East and West to cooperate on resolving the Berlin crisis were limited; these efforts occurred just before and well after the crisis peak. During the Cuban crisis, the United States and the Soviet Union made serious cooperative efforts to settle the crisis in both the peak and reduction phases. Both sides gave their proposals and offers greater non-verbal support, and generally cooperated more on Cuba than on Berlin. Conflict intensity during the peak phase of the Cuban crisis may have been so high that both sides cooperated to avoid war. The absence of a common East-West objective during the Berlin crisis peak may explain why there was minimal cooperation at that time.

For the two crises, the author examined a number of initiative-response sequences comprising conflictive or cooperative action initiatives by one side for which responses by the other side could be clearly identified. Nearly all NATO and WTO initiatives during the Berlin crisis were conflictive. NATO responses to WTO initiatives on Berlin tended to de-escalate the crisis, except just after the crisis peak and in the post-crisis phase, when NATO initiatives favored escalation. WTO responses to NATO initiatives on Berlin alternated between escalation and de-escalation.

All initiatives by the United States during the Cuban crisis were conflictive. The Soviet Union shifted from conflictive initiatives early in the crisis to cooperative initiatives in the crisis peak phase. U.S. responses to Soviet initiatives favored de-escalation early and late in the crisis, but favored escalation during the intensification and crisis peak phases. Nearly all Soviet responses on Cuba tended to de-escalate the crisis.

Prediction of Crisis Behavior. Using the Berlin and Cuban data, the author employed several indicators in attempting to predict NATO and WTO behavior at particular times during the crisis based on earlier actions. The author found that the intensity of an actor's statements of intent relative to its statements of desire and evaluation at a given time may indicate the probability that the actor will carry out its statements of intent at a later time.

For conflictive actions, the Berlin and Cuban crises provide evidence that the intensity of threats relative to demands and disapproval can indicate the probability that threats will be carried out with corresponding conflictive deeds. In the early phases of both crises, NATO and WTO made threats that were later followed by corresponding conflictive deeds. In both crises, one side then shifted from relatively high to relatively low threat intensity and later abstained from conflictive deeds that might have been expected from its earlier threats.

For cooperative actions, the Berlin and Cuban crises also provide evidence that the intensity of offers relative to proposals and approval can indicate the probability that offers will be carried out with corresponding cooperative deeds.

PREFACE

This paper summarizes an analysis of interaction between members of the North Atlantic Treaty Organization and members of the Warsaw Treaty Organization during the Berlin crisis of 1961, and during the Cuban crisis of 1962. The analysis is part of a larger project designed to measure and explain conflict and cooperation intensity in the East-West system since World War II. The larger East-West project covers relations within and between the Eastern and Western alliances, and includes United States-Soviet, Soviet-Chinese and Chinese-U.S. relations.

Whereas the objective of the East-West project is to measure and explain monthly and yearly changes in conflict and cooperation intensity, the present study measures and attempts to predict daily and weekly changes in the intensity and composition of conflict and cooperation during the Berlin and Cuban crises. The East-West project may yield insights useful for medium- and long-range policy planning; the present inquiry may provide indicators more suitable for short-range crisis anticipation and management.

This paper is a shortened version of a longer work submitted as a Ph. D. thesis to the Department of Social Relations at Harvard University. The present paper summarizes the results of the thesis, but omits the detailed analysis of East-West interaction during the Berlin and Cuban crises, as well as a discussion of causal factors underlying the two crises.

Both the larger East-West project and the present study of crisis behavior utilize conflict and cooperation intensity ratio scales established from questionnaires which I gave to academic, government and military experts in international relations. In constructing the scales, I have tried to develop a measuring instrument that can help provide quantitative information about verbal and non-verbal interaction between nations analogous to data on monetary and commodity exchange between countries. I believe that such information is an important prerequisite for developing a predictive and explanatory science of social interaction at all analytic levels—from the interpersonal to the international.

For help in clarifying the concept and methodology of scaling action intensity, I am indebted to S. S. Stevens, Roger N. Shepard and Rudolph J. Rummel. For insights and assistance on various aspects of the scaling project, I am grateful to Edward E. Azar, Richard A. Brody, William R. Harris, Robert L. Jervis, Robert W. Lamson, Jeffrey S. Milstein, J. M. Schick, John H. Sigler, G. W. Thumm and Bryant M. Wedge. For suggestions on questionnaire design, I am indebted to S. S. Stevens, Karl W. Deutsch and Thomas C. Schelling.

I am deeply indebted to over eighty persons from the United States and other countries who responded to questionnaires and made it possible to construct the intensity scales. For acting as respondents for several versions of the questionnaires, I am grateful to various members of the Center for International Affairs at Harvard University.

For suggestions on the coding and rating of actions, I am indebted to Robert R. Beattie and to Gary A. Hoggard and other members of the World Event/Interaction Survey project at the University of Southern California, under the direction of Charles A. McClelland. My typology of conflictive and cooperative action categories draws heavily on the pioneering work of McClelland and his associates.

My understanding of the theoretical bases of conflict and cooperation has been clarified by Karl W. Deutsch's perceptive comments and writing. I have derived important insights from Thomas C. Schelling on the nature of cooperation and bargaining during conflict between nations.

I have benefited from discussions with Raymond Tanter, both on the theoretical bases on the study and on possible policy-relevant applications. I am indebted to Tanter for incisive comments on parts of the paper, and for general encouragement and support of the East-West project, of which this inquiry is a part.

The study is part of the Computer-Aided System for Conflict and Cooperation Intensity Measurement (CACIM) at The University of Michigan. The CACIM effort has been supported in part by the Voluntary International Coordination (VIC) project at The University of Michigan. The VIC project is funded by the Behavioral Sciences Division of the Advanced Research Projects Agency under Contract Number N 00014-67-A-0181-0026. The judgments expressed in the study, however, are mine and do not necessarily reflect the views of any individuals in or Agencies of the United States Government.

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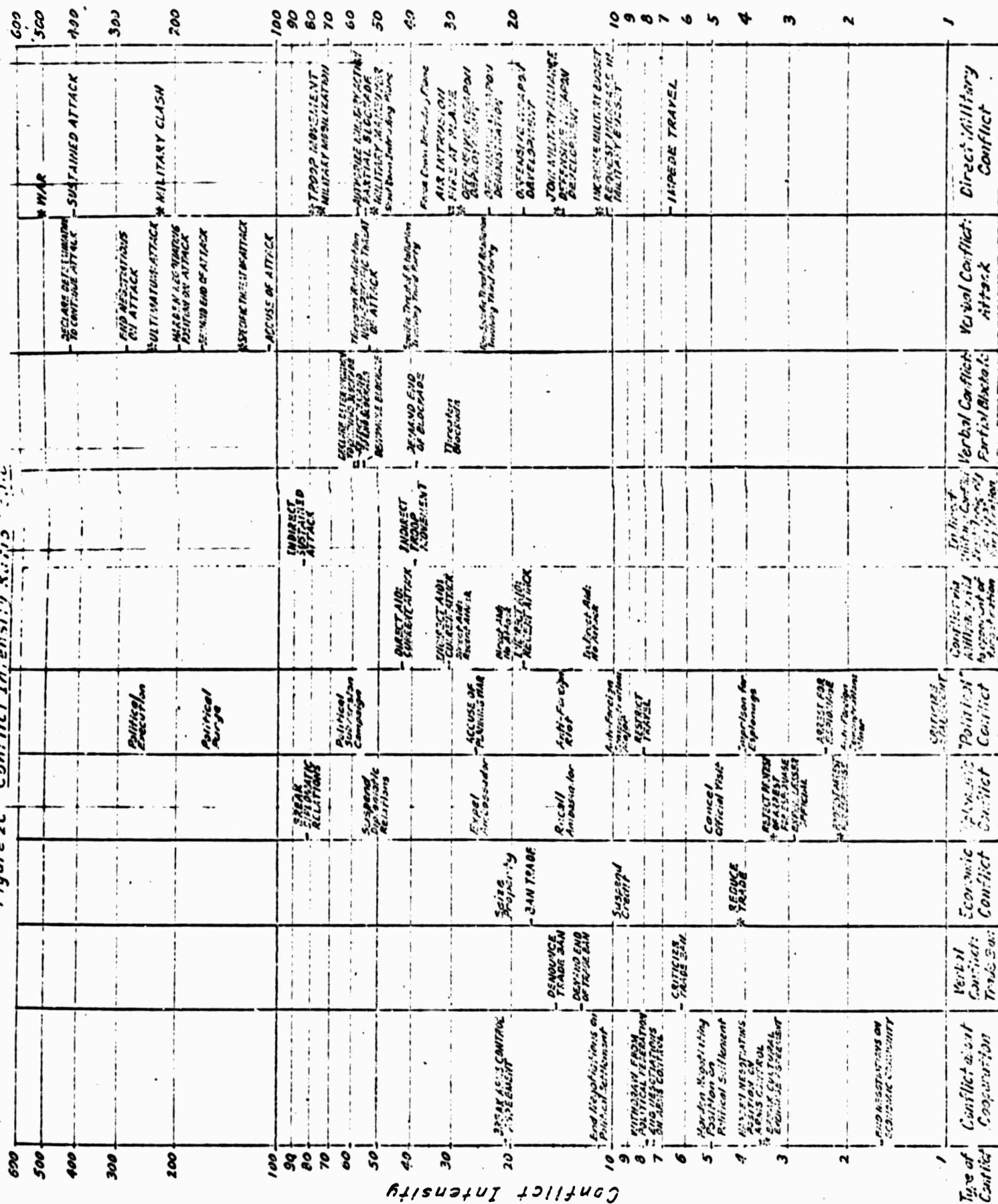
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NOT REPRODUCIBLE

1. INTRODUCTION

The objectives of this study are to measure and explain conflict and cooperation intensity between East and West during the Berlin crisis of 1961 and the Cuban crisis of 1962. The study is part of a larger project designed to measure and explain East-West relations since World War II.

The general objectives of the East-West project are:

1. To develop a method for measuring conflict and cooperation intensity between nations over time.
2. To use this method to measure conflict and cooperation in the East-West system since World War II.
3. To evaluate possible causal relationships between changes in national attributes and capabilities in the East-West system and changes in East-West conflict and cooperation.

The present study examines interaction between members of the North Atlantic Treaty Organization (NATO) and members of the Warsaw Treaty Organization (WTO) related to the Berlin crisis between May and December, 1961, and the Cuban crisis between August and December, 1962.¹

Theoretical assumptions underlying the inquiry include the following:

1. Nations may engage in conflictive interaction if their leaders perceive conflicting or incompatible goals.
2. Nations may engage in cooperative interaction if their leaders perceive common or compatible goals.

¹NATO members include the United States, Canada, Great Britain, France, the Netherlands, Belgium, Luxembourg, Italy, Norway, Denmark, Iceland, Portugal, Greece, Turkey, and the Federal Republic of (West) Germany. WTO members include the Soviet Union, Albania, Bulgaria, Czechoslovakia, the Democratic Republic of (East) Germany, Hungary, Poland, and Rumania.

3. Conflict between nations does not necessarily preclude cooperation--i.e., nations may cooperate during periods of intense conflict if their leaders perceive both common and conflicting goals.¹

The study considers the extent to which East and West may have perceived common and conflicting goals during the Berlin and Cuban crises, and how these goals were related to the intensity of conflict and cooperation during the two crises.

Specific objectives of the present study include:

1. Measuring the intensity of verbal and non-verbal conflict and cooperation by day between NATO and WTO for the Berlin and Cuban crisis periods.

2. Using this data to determine whether knowledge about the composition and intensity of actions at a given time can be used to predict later actions.

3. Using the Berlin and Cuban cases to examine whether data on changes in the attributes and capabilities of NATO and WTO can be used to explain changes in conflict intensity between NATO and WTO.

The author assigned actions by NATO and WTO members during the two crises to one of 33 categories organized around two action dichotomies: conflict-cooperation and verbal-non-verbal (or "words-deeds"). He classified verbal actions into three sub-categories:

1. The actor's evaluation or perception of past or current action by the target nation (e.g., disapproval, approval).

2. The actor's desire for future action by the target nation (e.g., demands, proposals).

3. The actor's intent regarding its own possible future action vis-à-vis the target nation (e.g., threats, promises).

These three verbal sub-categories represent three levels of commitment to deeds or probability that the actor's words will be followed by related deeds.

The study utilizes conflict and cooperation intensity ratio scales constructed from questionnaires which the author administered to academic, government and military experts in international relations. Using the scales,

¹This assumption is consistent with Thomas Schelling's (1960, 1966) analysis of cooperation and bargaining during conflicts.

the author assigned a conflict or cooperation intensity to each action included in the study.¹ For NATO and WTO, the author plotted the daily intensity of each of the eight action categories outlined above (evaluation, desire, intent and deeds for conflict and cooperation) during the Berlin and Cuban crisis periods.

Using this daily intensity data, the author analyzed the Berlin and Cuban crises using the following criteria:

1. Identification of five crisis phases: pre-crisis, intensification, peak, reduction and post-crisis.
2. Changes in conflict and cooperation intensity during the crisis.
3. The occurrence of independent cooperative actions as distinguished from interdependent cooperative interaction.
4. The occurrence of bargaining during the crises.
5. The extent to which words were accompanied or followed by supporting deeds as an index of the credibility of words.
6. The extent to which the intensity of statements of intent relative to statements of desire and evaluation predicted future deeds.
7. The initiation of conflictive and cooperative action sequences by each side, and the extent to which responses to initiatives favored escalation or de-escalation of the crises.

Part 2 of the paper presents the method used to measure conflict and cooperation intensity during the crises. Parts 3 and 4 give daily intensity scores for the Berlin and Cuban crises, respectively. Using the seven analytic criteria listed above, Part 5 presents a comparative summary of the two crises. Included is a consideration of how NATO and WTO actions at particular times during the crises might have been used to predict later actions. Part 5 also summarizes the interaction indicators used in the study and suggests how they might be useful in crisis anticipation and management, and in forecasting short-term trends of conflict and cooperation in the international system.

¹ The study includes actions by heads of state or official representatives, actions assumed to have official approval, and actions directed primarily at another nation. Actions assumed not to represent a nation's official position (e.g., a legislator's statement urging his nation to alter its policy toward another nation) were excluded. Actions directed primarily at a domestic audience (e.g., a head of state's speech urging domestic support for his nation's policy toward another nation) were also excluded from the study.

2. MEASURING CONFLICT AND COOPERATION INTENSITY BETWEEN NATIONS

This chapter describes the coding and rating procedures used to compute daily conflict and cooperation intensity scores for East and West during the Berlin and Cuban crises. For each action or event coded, the analyst determined if the action was discrete (occurring within a 24 hour period-- e.g., a protest, an agreement) or continuing (lasting more than one day-- e.g., a blockade, a military alert). He recorded the date of each discrete action and the time period covered by each continuing action. The analyst then coded the actor that initiated the action and the target at which the action was directed. He coded the action for geographic area (e.g., Berlin, Cuba) and resource-area (e.g., military, political-legal). He then selected one of 33 action categories (e.g., protest, agree) that best described the action. These 33 categories are classified as conflict or cooperation and as either verbal ("words") or non-verbal ("deeds"). The 33 categories are grouped into eight major categories covering deeds and three kinds of words (see Section 2.4 below). Finally, the analyst assigned to each action a conflict or cooperation intensity equal to the intensity of an identical or similar action on a conflict or cooperation intensity ratio scale. If such an action could not be located, the analyst assigned an intensity rating equal to the intensity of a scale action that seemed to match the given action in intensity. The steps in the coding procedure outlined above are described in detail in the sections that follow.

2.1 Actor and Target

The analyst coded each action for actor and target. The actor is the nation (or group of nations) that initiated the action; the target is the nation (or group of nations) at which the action was directed. For unilateral actions (e.g., a protest), actor and target are different parties. For bilateral actions (e.g., an agreement) the participants are coded both as actor and target. For example, if the U.S. and the U.S.S.R. agree to

hold a meeting, both the U.S. and the U.S.S.R. are coded as actor and target.

2.2 Geographic Area

Actions occurring in or involving the participants' interests in a particular geographic area were coded for that area. For example, if the U.S. protests a Soviet action in Berlin, the protest is coded as concerning Berlin. Or if the U.S.S.R. denounces plans for West German participation in NATO, the action is coded as concerning West Germany. Actions related to Berlin or Germany comprise the data presented in Part 3; actions related to Cuba constitute the data in Part 4.

2.3 Resource-Area

Figure 2A below lists six "resource-areas" in international relations: economic-technological, military, diplomatic, political-legal, cultural and ideological. The chart gives a two-digit code number for each area and lists relevant resources, capabilities and attributes. These resources may be considered as bases of influence--i.e., factors that nations use in attempts to affect the actions of other nations.¹

For each resource-area, the chart also gives examples of conflictive and cooperative interaction involving the corresponding resources or bases of influence. Thus the examples indicate ways in which nations may use different resources as bases of influence to achieve particular objectives.²

The analyst coded each action in the Berlin and Cuban crises for the appropriate resource-area. Actions were coded for the resource-area actually used in the action, not for the area to which the action may

¹The resources may also be considered as bases of status--i.e., as bases on which a nation's standing in the international system is evaluated.

²For example, in the economic-technological resource-area, a nation's trade is one aspect of its economic capability; a nation may utilize trade to affect other nations through conflictive interaction (e.g., through a trade restriction or embargo) or through cooperative interaction (e.g., through a trade agreement).

Figure 2A Resource-Areas in International Relations

Code No	Resource-Area	Resources, Capabilities, Bases of Influence	Types of Interaction (Compatible interests)	Types of Influence Attempts (Compatible interests)
10	Economic-Technological	Population, physical and human resources, living standard. Raw materials, production facilities, technology. Growth rate, trade balance. Financial institutions.	Trade competition. Curtailment, ending of technical exchange, economic aid. Economic boycotts, trade bans, embargoes. Seizure of property.	Trade, economic aid. Technical exchange, joint research. Joint ownership ventures. Tariff reductions. Regional common markets. Economic integration.
20	Military	Military personnel, weapons, bases, equipment. Military technology, organization. Ability to protect, enhance other resources, capabilities. National security.	Competition in military capability. Competition for military allies. Warnings, threats of military action. Military action: troop and weapon deployments, blockades, fighting.	Ending military action. Arms control, reduction. Military alliances, military aid. Joint military commands. Military integration.
30	Diplomatic	Knowledge of events. Conditions in other nations. Facilities for affecting events in other nations. Legations, embassies.	Boycott of official functions. Formal diplomatic protests. Expulsion of diplomatic personnel. Diplomatic espionage. Curtailment, suspension of diplomatic relations.	Establishment, expansion of consular, diplomatic relations. Meetings, consultations, official state visits.
40	Political-Legal	Authority over own population, territory. Ability to implement own foreign policy decisions, to affect policy decisions of other nations. Membership in alliances, international organizations. Legal standards.	Competition for political allies. Government-supported anti-foreign demonstrations. Intrusion within territorial limits. Subversion. Arrest, expulsion of foreign nationals. Political propaganda: accusations, demands. Warnings, threats of political action. Denial of access rights, restriction of travel.	Negotiation, settlement of disputes over sovereignty, territory, rights of access. Statements of approval. Political alliances. Joint sovereignty agreements. Political federations.
50	Cultural	Educational institutions. Cultural facilities, traditions. Moral standards. Religion.	Ending cultural exchange. Conflict over cultural, religious differences.	Cultural exchange. Cultural integration.
60	Ideological	Ideology as a unifying factor, as justifying, legitimizing national policy.	Ideological propaganda. Ideological conflict.	Affirmation of common ideology.

refer.¹ Results from coding the Berlin and Cuban material for resource-area are given in Section 5.3.

2.4 Action Categories: Conflict and Cooperation, Verbal and Non-Verbal

The analyst coded each action for one of 33 action categories organized around the two action dichotomies, conflict-cooperation and verbal-non-verbal (or "words-deeds"). These categories are presented in Figure 2B below. The rationale underlying the action typology is outlined below.

Conflict and Cooperation. Most actions between nations can readily be classified as either conflict or cooperation. A few kinds of actions (e.g., requests by one nation for information from or action by another nation) are relatively neutral, involving communication neither strongly conflictive nor cooperative in nature. In practice, however, it is usually possible to classify such actions as conflict or cooperation according to whether the actions seem generally hostile or friendly in nature, and whether they seem generally desirable or undesirable to the target nation.²

If an actor directs an action at a target, that action is considered to be conflict if it seems undesirable to the target, if it involves interests of the actor and target that are incompatible, or if it involves or suggests a negative sanction by which existing valued factors (resources, capabilities) may be destroyed through interaction (e.g., through the use of military force).

If an actor directs an action at a target, or if two parties take joint action, that action is considered to be cooperation if it seems desirable to the target or to both parties, if it involves compatible interests of the participants, or if it involves a positive sanction by which

¹For example, an official protest about an alleged military incident would be coded as a diplomatic (not military) action. An accusation about a military incident would be coded as a political action. A threat of military attack, however, would be coded as a military action. On the other hand, a threat of political action would be coded as a political action. These distinctions between protests, accusations and threats are shown in Figure 2A in the column labeled "conflict."

²These distinctions are illustrated in Figure 2B for the categories REQUEST and COMMENT.

new valued factors may be created through interaction (e.g., the increase of trade following a trade agreement).¹

Verbal and Non-Verbal Actions. Actions can be classified as either verbal "words" (e.g., demands, offers) or non-verbal "deeds" (e.g., the use of military force, carrying out an agreement). Verbal actions can be further classified into three sub-categories:

1. The actor's evaluation or perception of past or current action by the target nation (e.g., disapproval or approval).

2. The actor's desire for future action by the target nation (e.g., demands, proposals).

3. The actor's intent regarding its own possible future action vis-à-vis the target nation (e.g., threats, promises).

These three verbal sub-categories generally represent three levels of commitment to deeds or probability that the actor's words will be followed by related deeds (e.g., that a verbal threat will be carried out). In (1), explicit reference to future deeds by the actor is minimal, in (2), future deeds are suggested or implied, and in (3), the probability of future deeds is explicit.

When used with the action intensity scales presented below, the distinction between verbal and non-verbal actions and the distinction between verbal evaluation, desire and intent allow the analyst to examine important aspects of interaction between nations. These aspects include the following:

a. The extent to which actions consist of words or deeds.

b. The extent to which verbal expressions of desire and intent are accompanied by related conflictive or cooperative deeds as an index of the credibility of verbal expressions.

c. The intensity of verbal expressions of intent relative to expressions of desire and evaluation as an index of a party's commitment to carry out future conflictive or cooperative deeds.

¹These criteria for conflict and cooperation are derived in part from a typology of relations between states developed by Professor Karl W. Deutsch. (See Deutsch, 1966, especially pp. 300-04.) I am indebted to Professor Deutsch for helpful suggestions on the theoretical bases of conflict and cooperation between nations.

d. The extent to which verbal expressions of intent are followed by corresponding deeds--e.g., the extent to which threats and promises are carried out.¹

The classification of actions (based on the conflict-cooperation and verbal-non-verbal dichotomies) outlined above yields eight major categories of action; each category appears in a separate cell in Figure 2B below. For these eight categories, the author compiled intensity data for the Berlin and Cuban crises. These data are presented in Parts 3 and 4 below.

In Figure 2B, the first digit of each category code number (shown in the upper-left corner of each cell) designates the action category. Odd first digits (1,3,5,7) refer to conflictive actions; even numbers (2,4,6,8) refer to cooperative actions. Numbers 1-6 refer to words; 7 and 8 refer to deeds.

The last three digits of the category code designate the action category. Numbers 010 through 220 refer (with some modifications) to the 22 categories used in the World Event/Interaction Survey (WEIS) project (Fitzsimmons et al., 1969).² Numbers 230 through 270 designate five categories (marked with asterisks on the chart) added by the author to include actions not covered by the WEIS categories.³

Coding the Berlin and Cuban Data. The analyst assigned each action concerning Berlin or Cuba to one of the 33 sub-categories in Figure 2B. The choice of sub-category determined in which of the eight major categories

¹For discussions of commitment and credibility, see Schelling (1966, Chapter 2) and Iklé (1964, p. 175).

²For the author's modifications of the 22 WEIS categories, see Corson (1970, p. 19n).

³In Figure 2B, the categories COMMENT (1020), ACCUSE (1120) and DENY (1140) generally cover the actor's negative perceptions and evaluations of the target; the categories COMMENT (2020) and APPROVE (2040) cover positive perceptions.

The categories COMMENT (5020), REJECT (5110), WARN (5160) and THREATEN (5170) cover the actor's expressed intent to take non-verbal conflictive action vis-à-vis the target. The categories COMMENT (6020), OFFER (60100), PROMISE (6050) and AGREE (6080) cover expressed intent to take non-verbal cooperative action.

Figure 28 Categories of Action Between Nations

Verbal ("Words")		Non-Verbal ("deeds")	
Actor's Evaluation, Perception of Past or Current Action by Target	Actor's Desire for Future Action by Target	Actor's Intent Regarding Own Possible Future Action vis-à-vis Target	
Conflict	1 Increasing Commitment to Deeds →	3	7
	1140 DENY (deny accusation, withdraw action, policy)	3150 DEMAND (order, command, insist, demand, compliance)	7220 FORCE (forceful or violent use of military resources, equipment to achieve objectives. Military engagement, non-military destruction, non-injury destruction)
	1120 ACCUSE (charge, criticize, blame, disapprove, denounce, deny, etc.)	3130 PROTEST (make formal or informal complaint)	7180 DEMONSTRATE (armed force mobilization, exercise, display. Non-military demonstration, meeting boycott or walk-out)
	1020 COMMENT (comment on situation, explain policy undesired by target)	3100 PROPOSE (offer proposal, suggest, urge action, policy undesired by target nation)	7230 INCREASE MILITARY CAPABILITY* (increase military spending, troop levels; develop weapons; authorize military action, reserve call-ups)
		3090 REQUEST (appeal, ask for information, aid, action in context undesirable to target)	7240 AID OPPONENT* (give military aid to opponent of target)
Cooperation	2	4	8
	2020 COMMENT (comment on situation, explain policy desired by target)	4090 REQUEST (appeal, ask for information, aid, action in context desirable to target)	8010 YIELD (surrender, submit, retreat, evacuate)
	2040 APPROVE (praise, flattery, applaud, endorse, support)	4100 PROPOSE (offer proposal, suggest, urge action, policy desired by target)	8060 GRANT (end negative sanctions, conflict action, threat of conflict action; express regret, apologize; give invitation, asylum, privilege, diplomatic recognition; release, return persons or property)
		4250 NEGOTIATE* (participate in substantive talks, negotiations on specific issue or interest-area)	8260 DECREASE MILITARY CAPABILITY* (reduce military spending, troop levels; reduce readiness for military action)
			8030 CONSULT (make or receive official visit, participate in meeting involving foreign travel for at least one participant)
			8270 CARRY OUT AGREEMENT* (implement a previous agreement - e.g., a diplomatic, economic, cultural or military agreement)
			8070 REWARD (give economic, technical or military aid)

* Categories not included in the WEIS code.

the action fell.¹ After assigning an intensity score to each action (see Section 2.5 below), the analyst aggregated the scores by day for each of the eight major categories in Figure 2b. This procedure yielded eight separate daily scores (four for conflictive actions, four for cooperative actions) for NATO and for WTO. These scores are presented in Parts 3 and 4.

A Note on Coding Negotiation, Visits and Meetings. As indicated in Figure 2B, the act of negotiation itself (NEGOTIATE, 4250) is considered to be cooperation between parties. What occurs during negotiation, however, may be coded either as cooperation (e.g., softening of negotiating position, offers, constructive proposals, compromise, partial agreement) or conflict (e.g., hardening of negotiating position, disagreement, rejection of a party's position, accusations, demands, threats).

If a national leader makes an official visit to another nation, or if leaders from two or more nations hold a meeting involving foreign travel for at least one participant, such action is coded as non-verbal CONSULT (8030). If, during such a visit or meeting, substantive negotiations are held on a particular issue, such action is coded as verbal NEGOTIATE for each party involved.

2.5 Determining Action Intensity

The analyst used the conflict and cooperation intensity scales summarized in Sections 2.6 and 2.7 to rate the intensity of actions during the Berlin and Cuban crises. The author constructed scales from results of questionnaires given to academic, government and military experts in international relations. To determine the intensity of a given action, the analyst assigned to the action a rating equal to the intensity of an identical or similar scale action. If such an action could not be located, the analyst assigned a rating equal to the intensity of a scale action that seemed to match the given action in intensity.

Magnitude Estimation. Determination of the intensity of conflictive and cooperative actions is based on a procedure called magnitude estimation, in which a person is asked to assign numbers to a series of stimuli forming a continuum. The number assigned to each stimulus is to be proportional to the intensity of the stimulus as the person perceives it. Essentially the procedure involves free matching of two perceptual continua; in the present

¹The choice of sub-category thus determined whether the action was conflict or cooperation, verbal or non-verbal, etc. Illustrative examples for each of the 33 sub-categories are given in Corson (1970, pp. 19-25).

case the person matches the perceived intensity of actions to the number continuum. The procedure is based on the psychophysical power principle which states that equal stimulus ratios produce equal sensation ratios (Stevens, 1966a, 1966b).¹

Selection of Actions for the Intensity Questionnaires. The author assembled a file of about two hundred different kinds of conflictive and cooperative actions that might occur between nations (e.g., a military clash, a trade agreement). Over a hundred different kinds of actions were drawn from the author's study of postwar relations within and between the NATO and WTO alliances. Additional actions were compiled from over a dozen other studies of relations between nations.² From this inventory of actions the author derived 54 conflictive and 38 cooperative actions for inclusion in the intensity questionnaires. These actions covered the full range of conflict and cooperation intensity (from low to high), included both verbal and non-verbal actions, and covered all six resource-areas listed in section 2.3.

Construction of the Intensity Scales. The conflict and cooperation intensity scales were constructed in two phases. The author designed a separate questionnaire for conflict and cooperation for each of the two phases--four questionnaires in all. In the first phase of the project, respondents were presented with 54 conflictive or 38 cooperative actions arranged in irregular order. Each action was printed on a separate card. Respondents were asked to arrange the actions in a rank-order of increasing intensity. The author used the responses from these questionnaires to compute a mean

¹This method of estimating the magnitude of stimuli has been used successfully in a number of areas, including a study of the seriousness of criminal offenses (Sellin and Wolfgang, 1964; Stevens, 1966a, pp. 7-8).

²These studies include the following: Benson (1961, p. 505; 1962, pp. 581-82); Fitzsimmons *et al.* (1969); Galtung (1966); Gross (1966, Chapters 2 and 3); Kahn (1965); McClelland (1968); McClelland *et al.* (1967); Nordheim and Wilcox (1967); Richman (1967); Rummel (1963, 1966a); and Scott (1967, Chapter 9).

The author is indebted to the Stanford Studies in International Conflict and Integration, Stanford University, for making available copies of four "marker decks" containing 120 conflictive and cooperative actions used to construct ordinal scales of inter-nation action intensity (Moses *et al.*, 1967).

rank-order for each action. From this data he constructed a 54-item rank-order conflict intensity scale and a 38-item cooperation intensity scale.

In the second phase of the project, respondents were presented with 14 conflictive actions selected from the original group of 54, or 14 cooperative actions selected from the original group of 38. These actions covered the full range of intensity. They were printed on separate cards and presented to respondents in irregular order. Respondents were asked to assign a number to each action proportional to its intensity as they perceived it. Using the responses from these questionnaires, the author computed the geometric mean for each action to determine its intensity. From this data he then constructed a 14-item conflict intensity ratio scale and a 14-item cooperation intensity ratio scale. The author then assigned intensity values (by interpolation) to the remaining 34 conflictive and 18 cooperative actions. Finally, he multiplied the resulting intensity values on both scales by factors so that the lowest item on each scale had a value of 1.

Each intensity ratio scale indicates the proportionate intensity relation between actions on the scale--e.g., an action with a scale value of 60 is twice as intense as one with a value of 30 (see Stevens, 1951, pp. 28-30).

The final 54-item conflict scale and the 38-item cooperation scale are summarized in Figures 2C and 2D below.¹

2.6 Summary of the Conflict Intensity Scale

Figure 2C below indicates intensities for 78 conflictive actions. The intensity values of the 54 actions in capital letters were determined from the two questionnaires described in Section 2.5. The 14 actions marked with asterisks comprised the second phase questionnaire. The author estimated intensities for the 24 actions in lower-case letters on the chart; estimates were based on the actions' relationship to the action included in the questionnaires. These estimates are tentative and subject to validation

¹The descriptions of the 92 actions as they appeared in the questionnaires are included in the fuller version of this study, and may be obtained from the author. The fuller version gives procedures for estimating the intensity of conflictive and cooperative actions, instructions given to respondents in both phases of the scaling project, and statistical data on the questionnaire results.

in a future questionnaire.

The 78 actions on the chart are classified into ten types of conflict located in separate columns. Included are conflict about cooperation (e.g., breaking off negotiations, breaking agreements), economic, diplomatic, and political conflict, conflict via military aid, indirect and direct military conflict, and three types of verbal conflict.

2.7 Summary of the Cooperation Intensity Scale

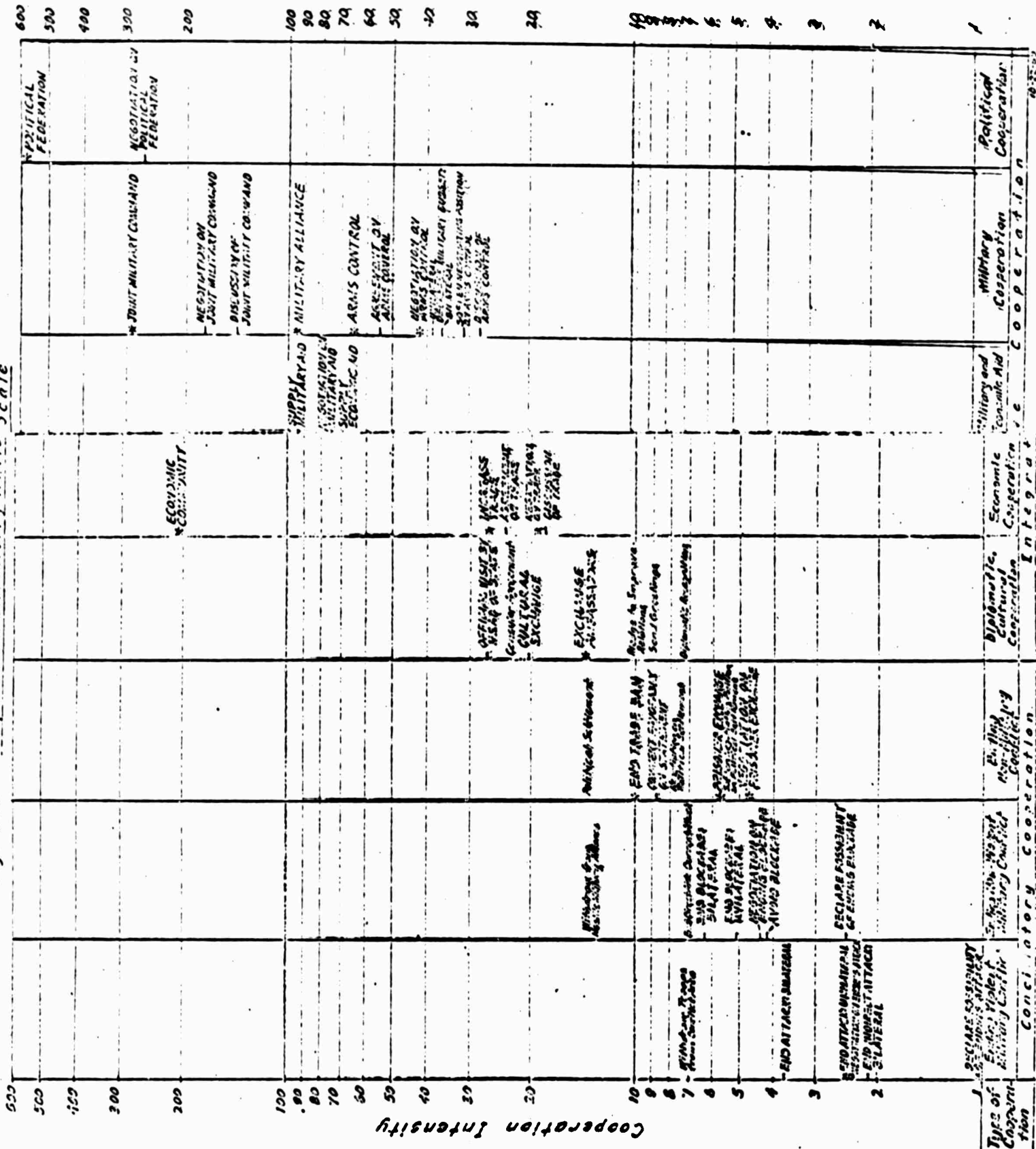
Figure 2D below indicates intensities for 48 cooperative actions. Intensity values for the 38 actions in capital letters were determined from the two cooperation intensity questionnaires described in Section 2.5. The 14 actions marked with asterisks comprised the second phase questionnaire. The author estimated intensities for the ten actions in lower-case letters on the chart; estimates were based on the actions' relationship to the actions included in the questionnaires. These estimates are tentative and subject to validation in a future questionnaire.

The 48 actions on the chart are classified into nine types of cooperation located in eight separate columns. Included are three types of conciliatory cooperation or cooperation on conflict (ending violent military conflict, ending non-violent military conflict, and ending non-military conflict); and six types of integrative cooperation (diplomatic, cultural, and economic cooperation; cooperation through economic and military aid, and military and political cooperation).

2.8 Action Coding and Rating Summarized

When actions between nations are coded and rated according to the procedures outlined in this chapter, it is possible to compute action intensity over any time period for any desired actor, target, geographic area, resource-area or action category. The analyst can compute action intensity for any of the 33 action sub-categories (e.g., threaten, carry out agreement) or any of the eight major categories (e.g., conflictive intent, cooperative deeds) shown in Figure 2B. In Parts 3 and 4, action intensity for East and West is given for each of the eight major categories by day for the

Figure 20 Cooperation Intensity Ratio Scale



Berlin and Cuban crisis periods.¹

¹There are parallels between the analytic dimensions used in the present analysis of interaction between nations, and dimensions used in other approaches to interaction analysis. In his study of interaction in small groups, Bales (1951) has used a positive-negative evaluative dimension that parallels the cooperative and conflictive parts of this study's evaluation-perception category. Bales has also used a task-orientation dimension that bears some relation to the present conflict-cooperation distinction.

At the inter-nation level, the General Inquirer system of automated content analysis has been used to analyze perceptions in communication between nations. The positive affect-negative affect dimension used in the General Inquirer system (North et al., 1963; Stone et al., 1966) also corresponds to the cooperative and conflictive parts of this study's evaluation-perception category. A group at Stanford University has used the General Inquirer to analyze U.S. and Soviet perceptions during the Cuban crisis (Holsti et al., 1964).

3. CONFLICT AND COOPERATION OVER BERLIN AND GERMANY, MAY-DECEMBER, 1961

3.1 Conflict and Cooperation Intensity Scores

Daily conflict and cooperation intensity scores for each of the four types of action are plotted below for East (WTO) and West (NATO) in a series of 16 charts covering the period May through December, 1961. Each chart covers a two-week period. Only actions related to Berlin and Germany are included. The charts were compiled from a chronology of 328 events. In addition to the intensity plots, the charts identify the major conflictive and cooperative actions by day. Conflictive actions that continued for more than one day (WTO military maneuvers in October and November) are shown at the top of the charts during the time they continued. For each day that a conflictive action continued, its intensity score was included in the daily conflict intensity score. Symbols for the different types of action intensity for East and West are shown in the key on each chart. On the charts, conflict intensity increases upward from the horizontal line of zero intensity; cooperation intensity increases downward from the zero line.

Data Sources. The four principal sources for actions used to compute the intensity scores are given below. The references are listed in approximate order of importance as comprehensive sources of events related to the Berlin crisis:

The New York Times.

Avraham G. Mezerik (ed.), "Berlin and Germany: Cold War Chronology," International Review, 8. 71 (1962).

Deadline Data on World Affairs.

The World Almanac and Book of Facts, 1961 and 1962 (New York World-Telegram Corporation).

Conflict Intensity Graph

Key:

	East (WTO)	West (NATO)
Verbal Intensity: "words"	...△...	...▽...
Evaluation	...△...	...▽...
Desire	...△...	...▽...
Intent	...△...	...▽...
Non-Verbal Intensity: "deeds"	—△—	—▽—
Total Intensity: words + deeds	—△—	—▽—

Major Conflictive Actions:

- N. Ger. rejects Soviet treaty bid (Date 7)
- US insists on Berlin rights (Date 8)
- USSR may give E. Berlin to E. Ger. (Date 9)

Cooperation Intensity Graph

Major Cooperative Actions:

(No specific actions are noted for this section.)

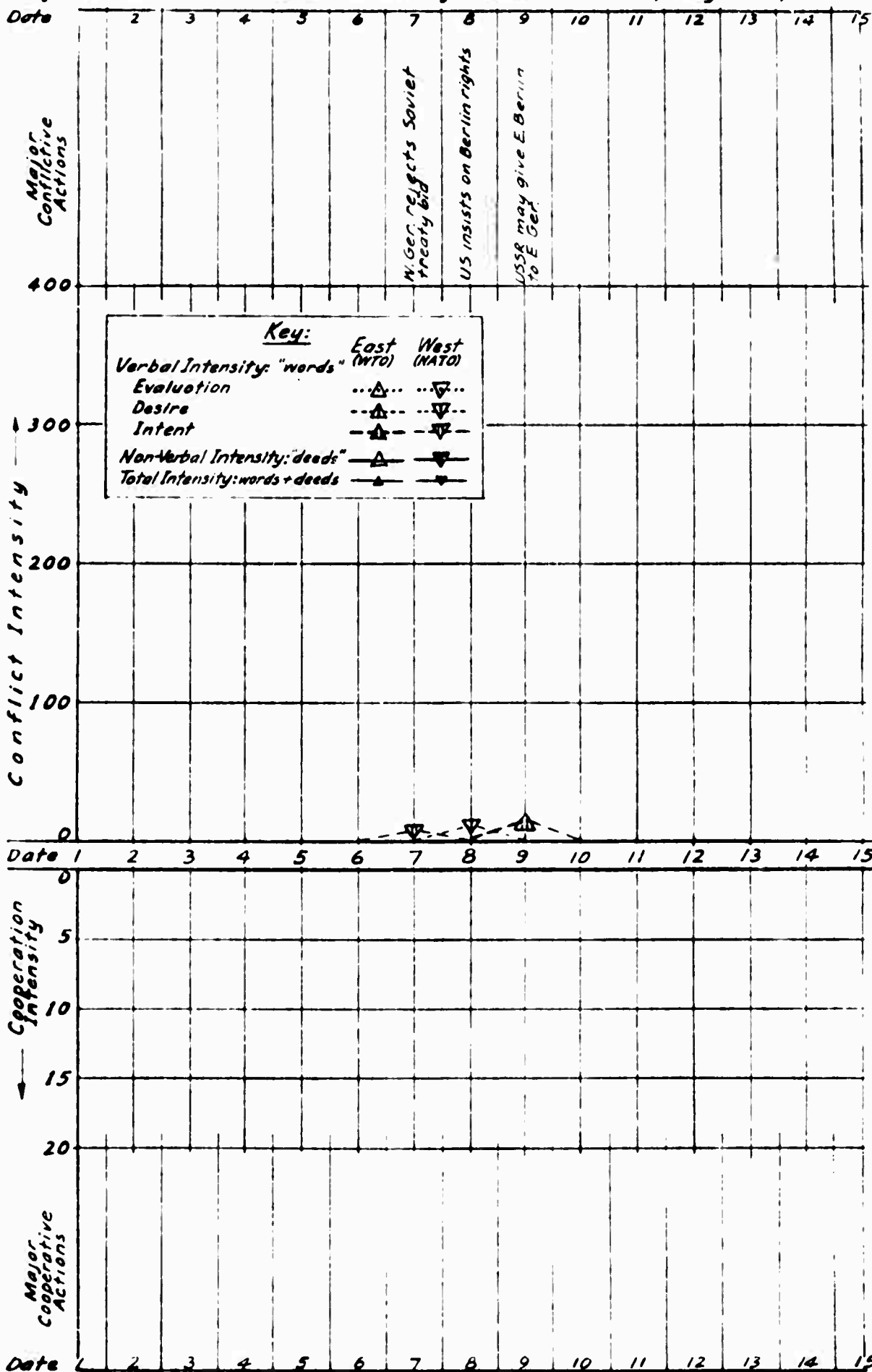
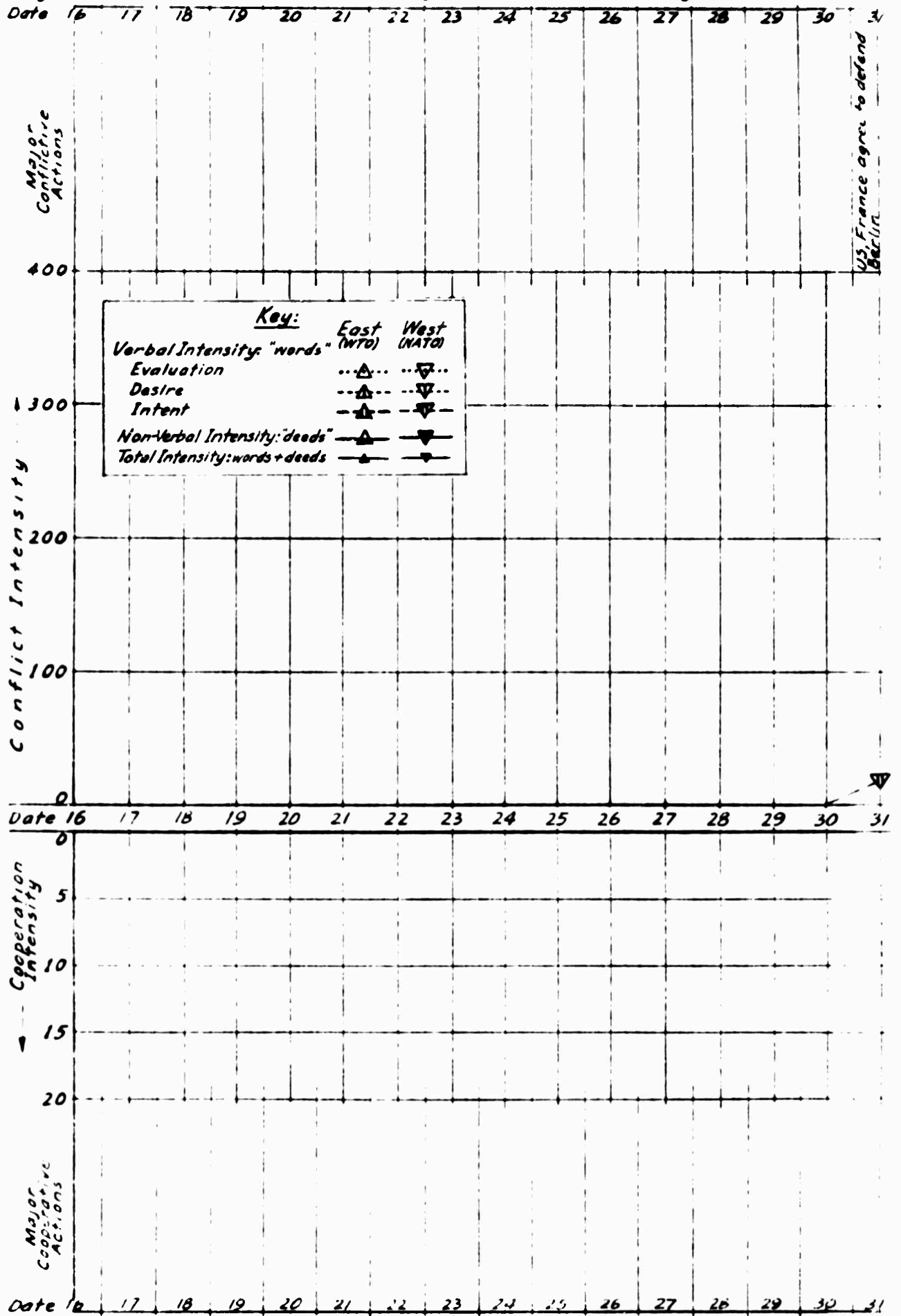


Fig. 3B East-West Interaction during the Berlin Crisis, May 16-31, 1961



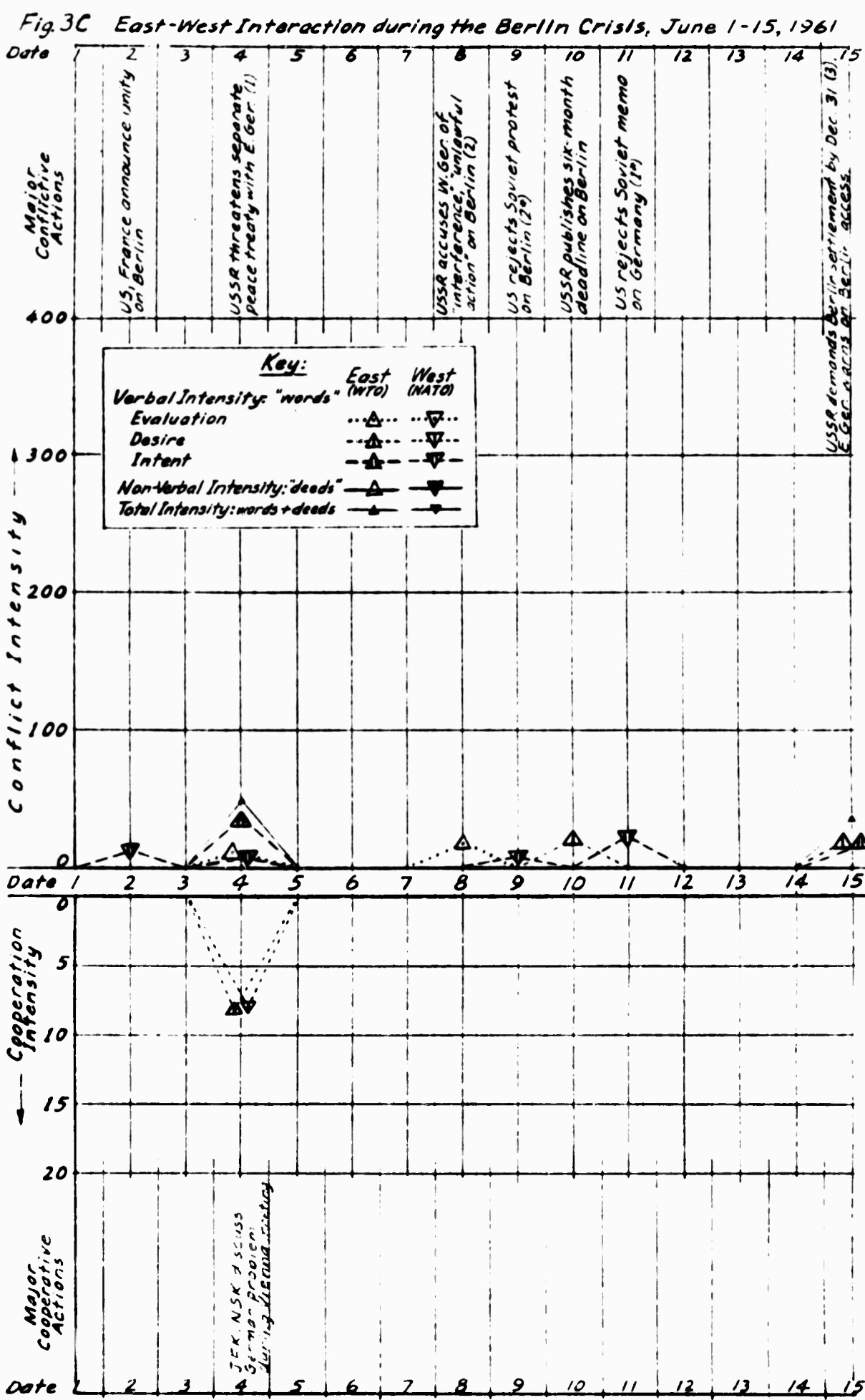


Fig. 3D East-West Interaction during the Berlin Crisis, June 16-30, 1961

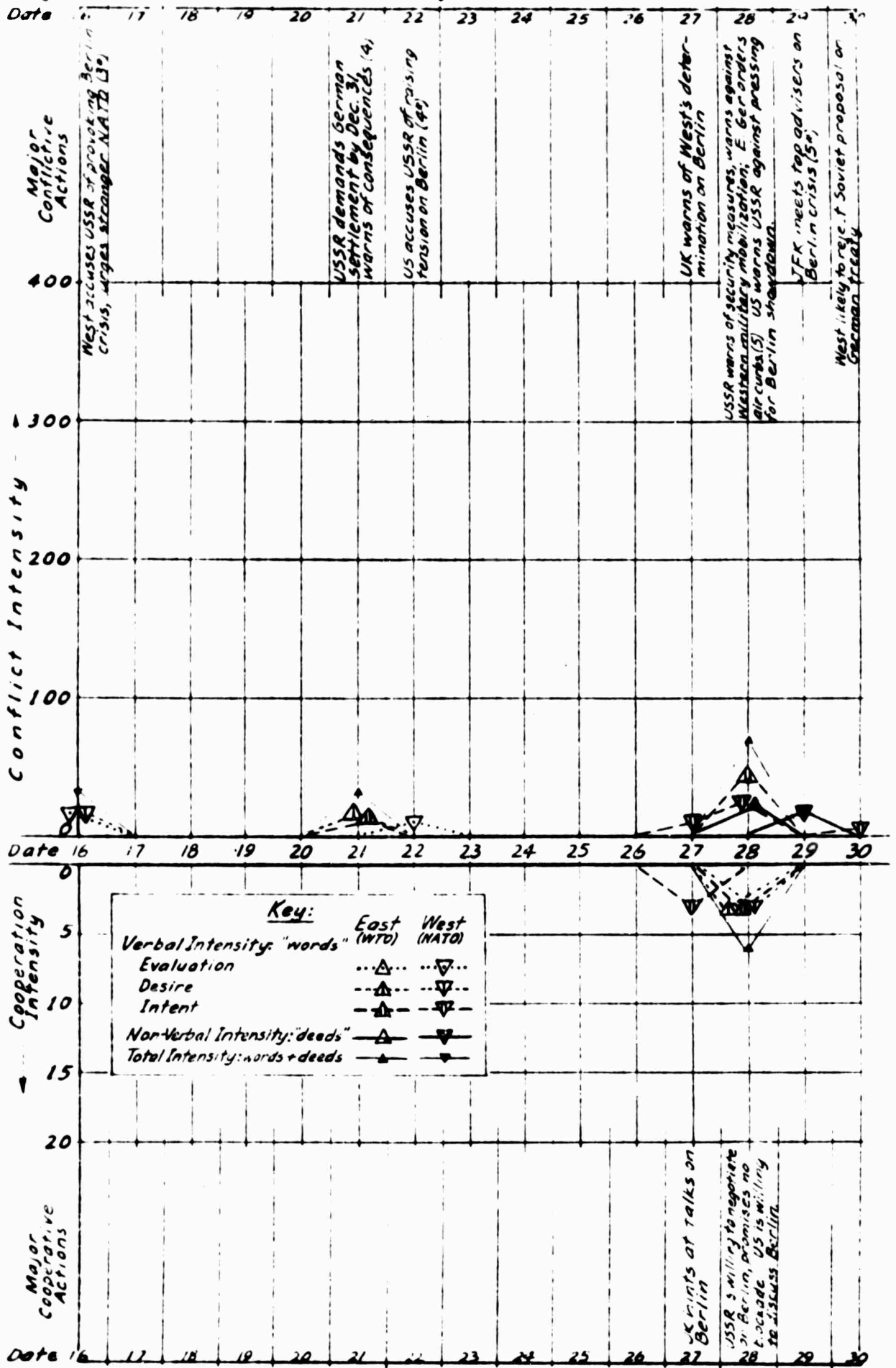


Fig. 3E East-West Interaction during the Berlin Crisis, July 1-15, 1961

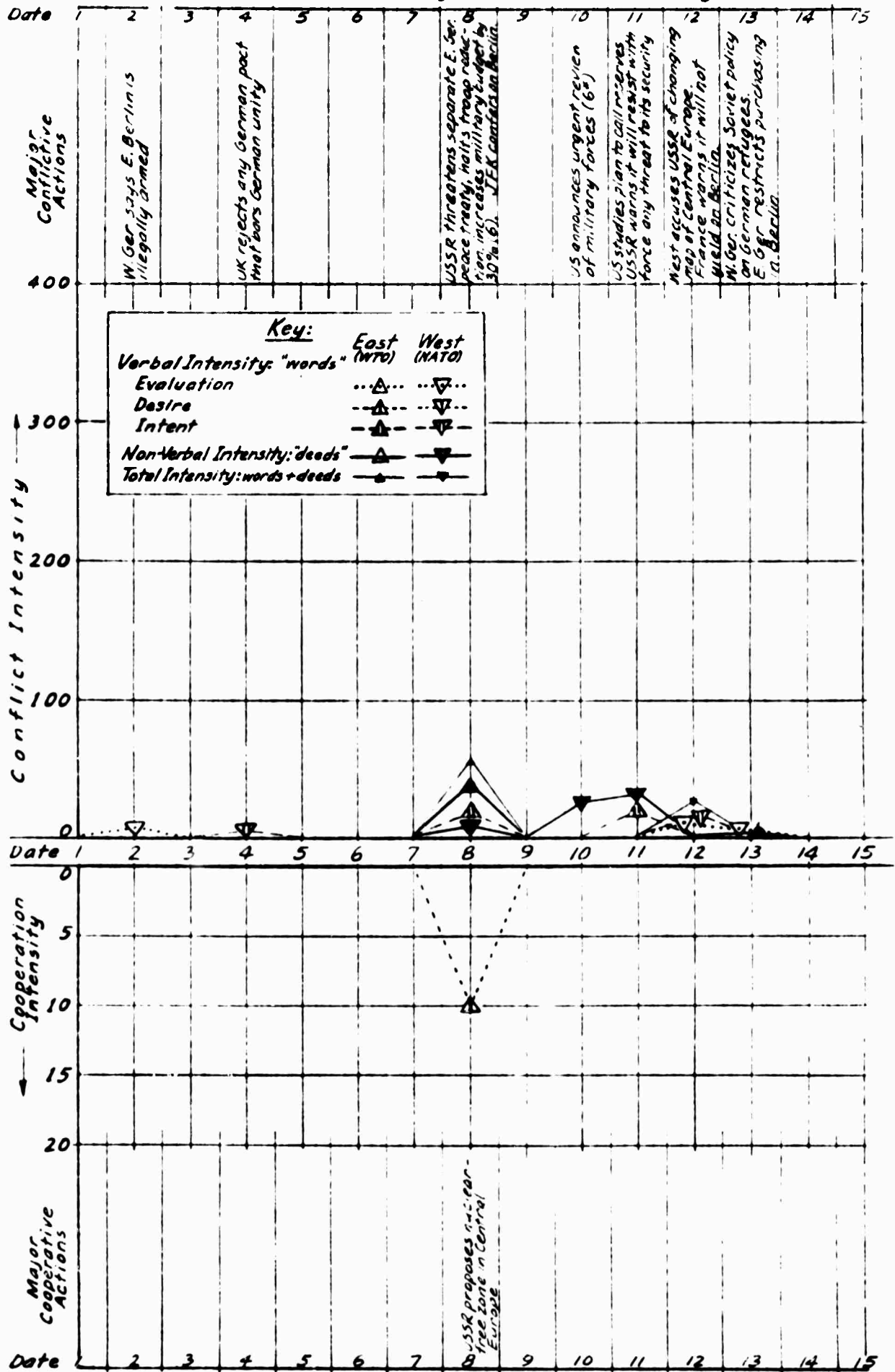


Fig. 3F East-West Interaction during the Berlin Crisis, July 16-31, 1961

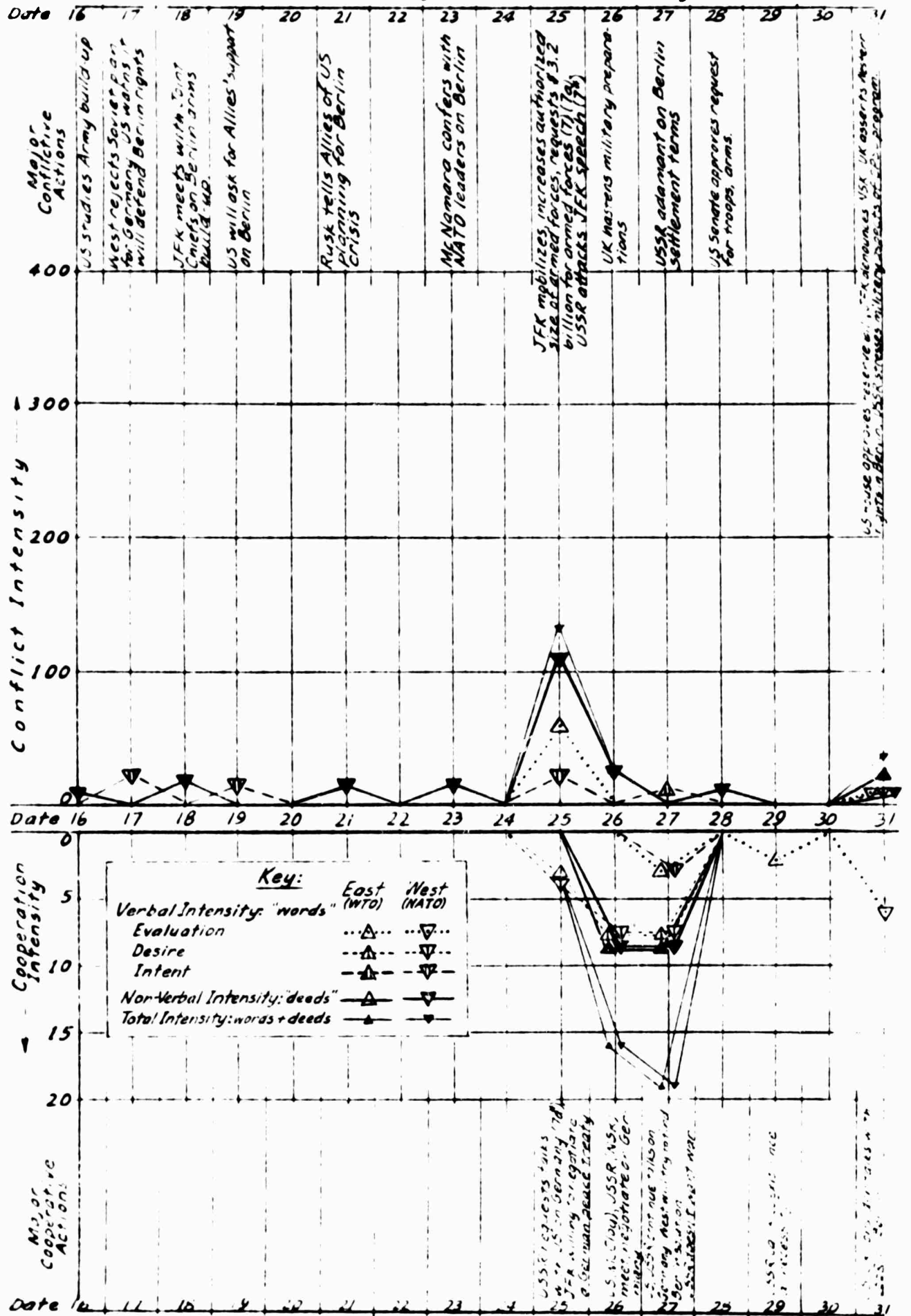
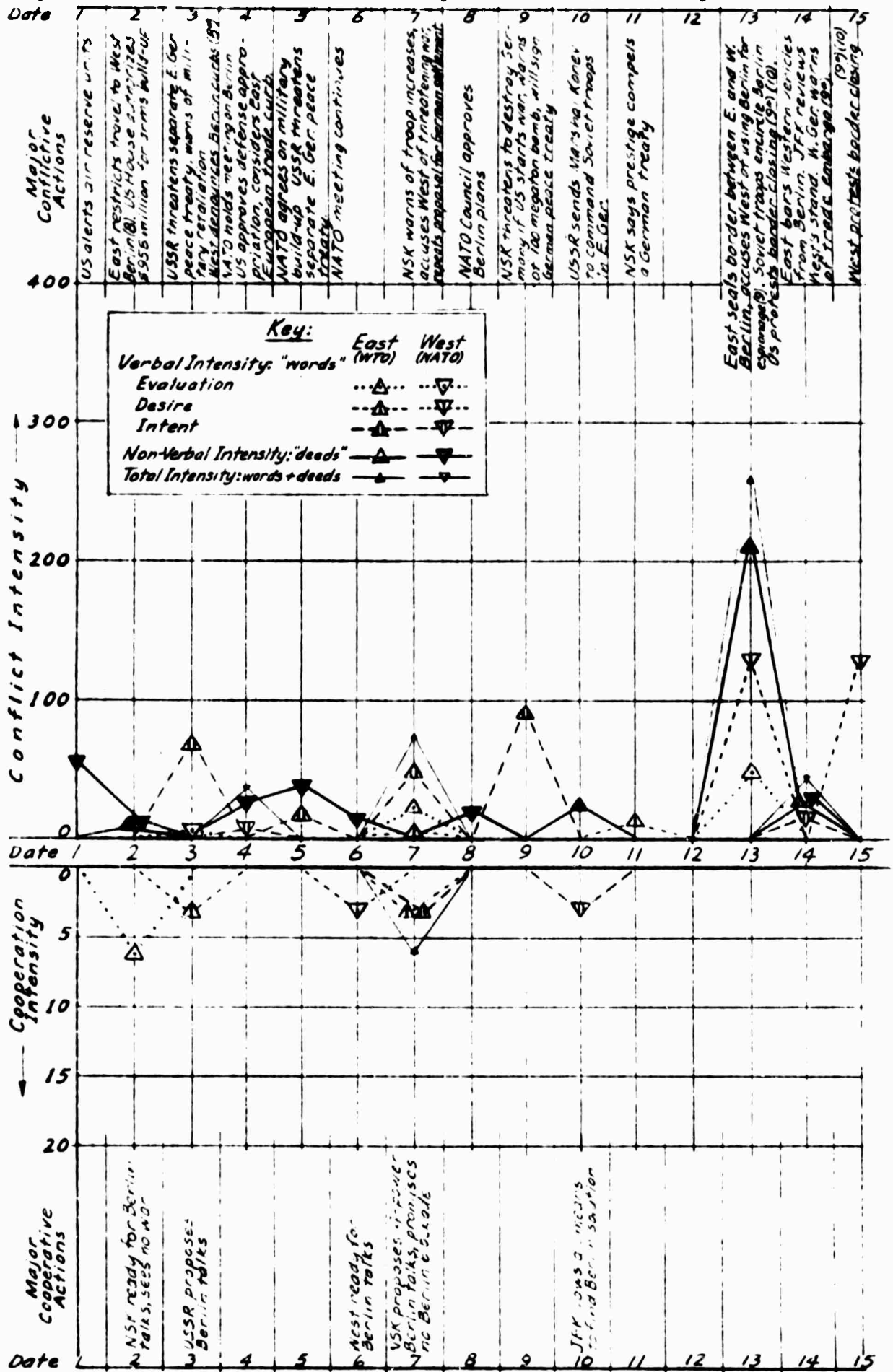


Fig. 36 East-West Interaction during the Berlin Crisis, August 1-15, 1961



[illegible]

Fig 31 East-West Interaction during the Berlin Crisis, September 1-15, 1961

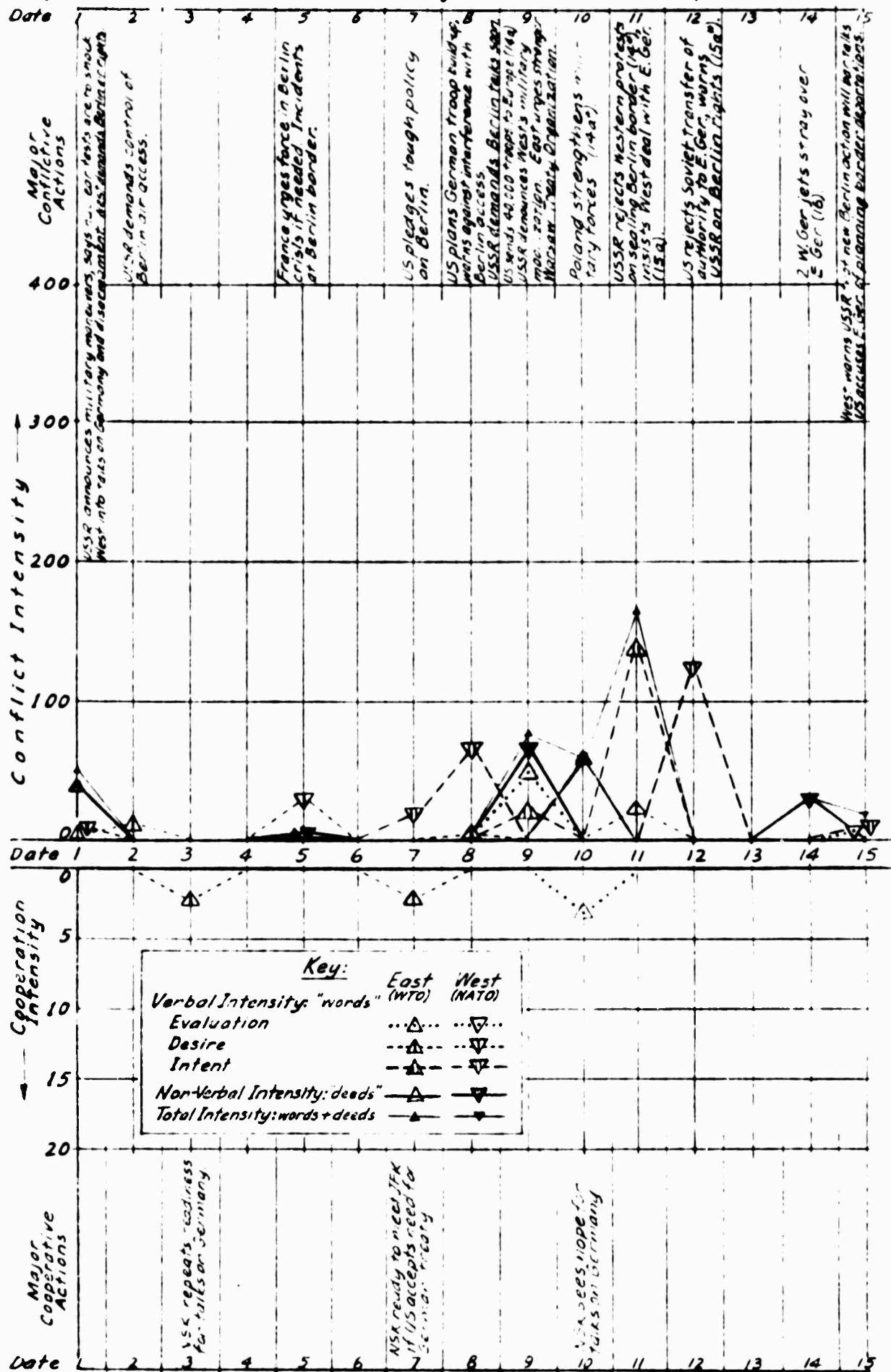


Fig. 3J East-West Interaction during the Berlin Crisis, September 16-30, 1961

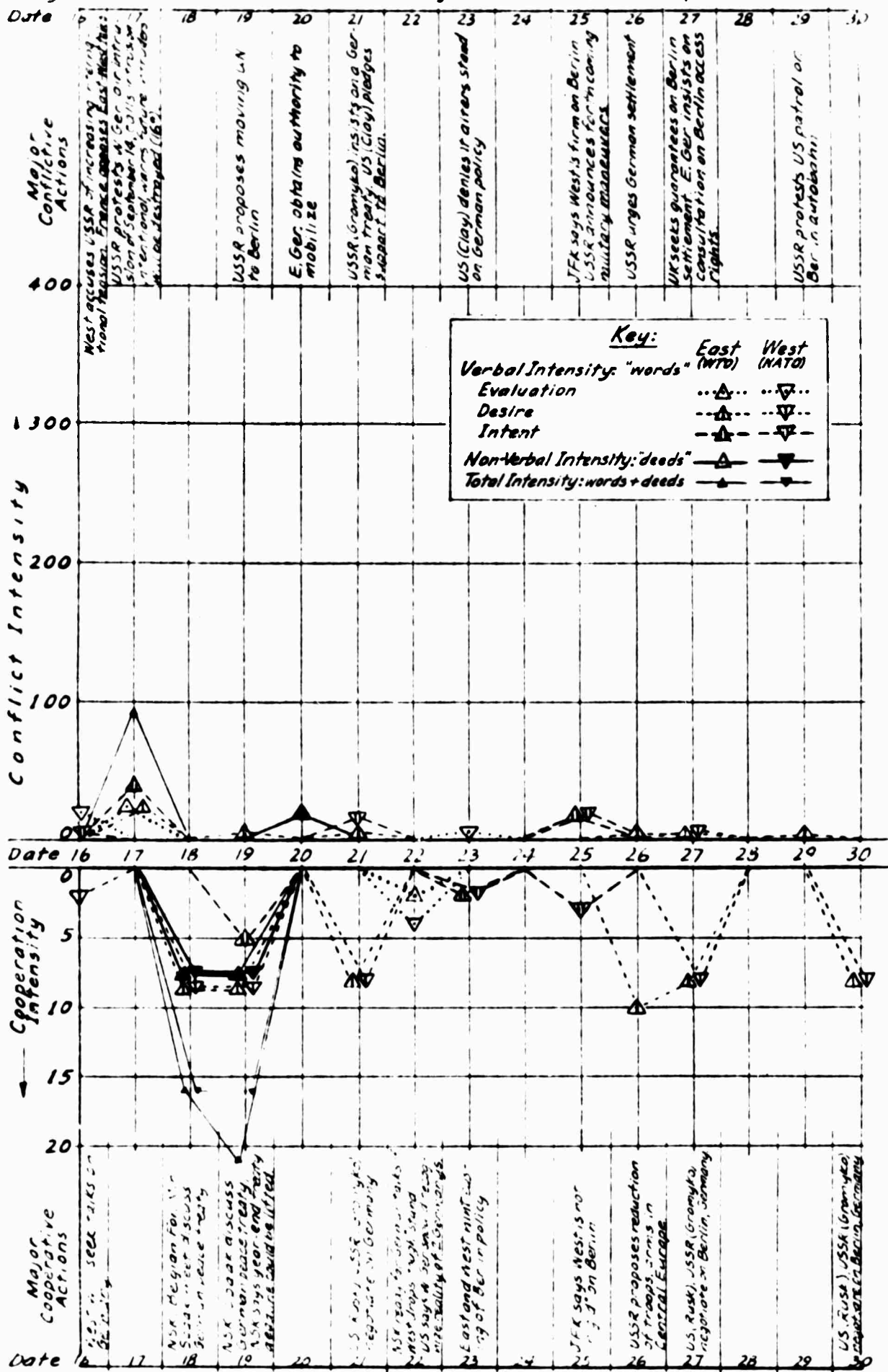


Fig.3K East-West Interaction during the Berlin Crisis, October 1-15, 1961

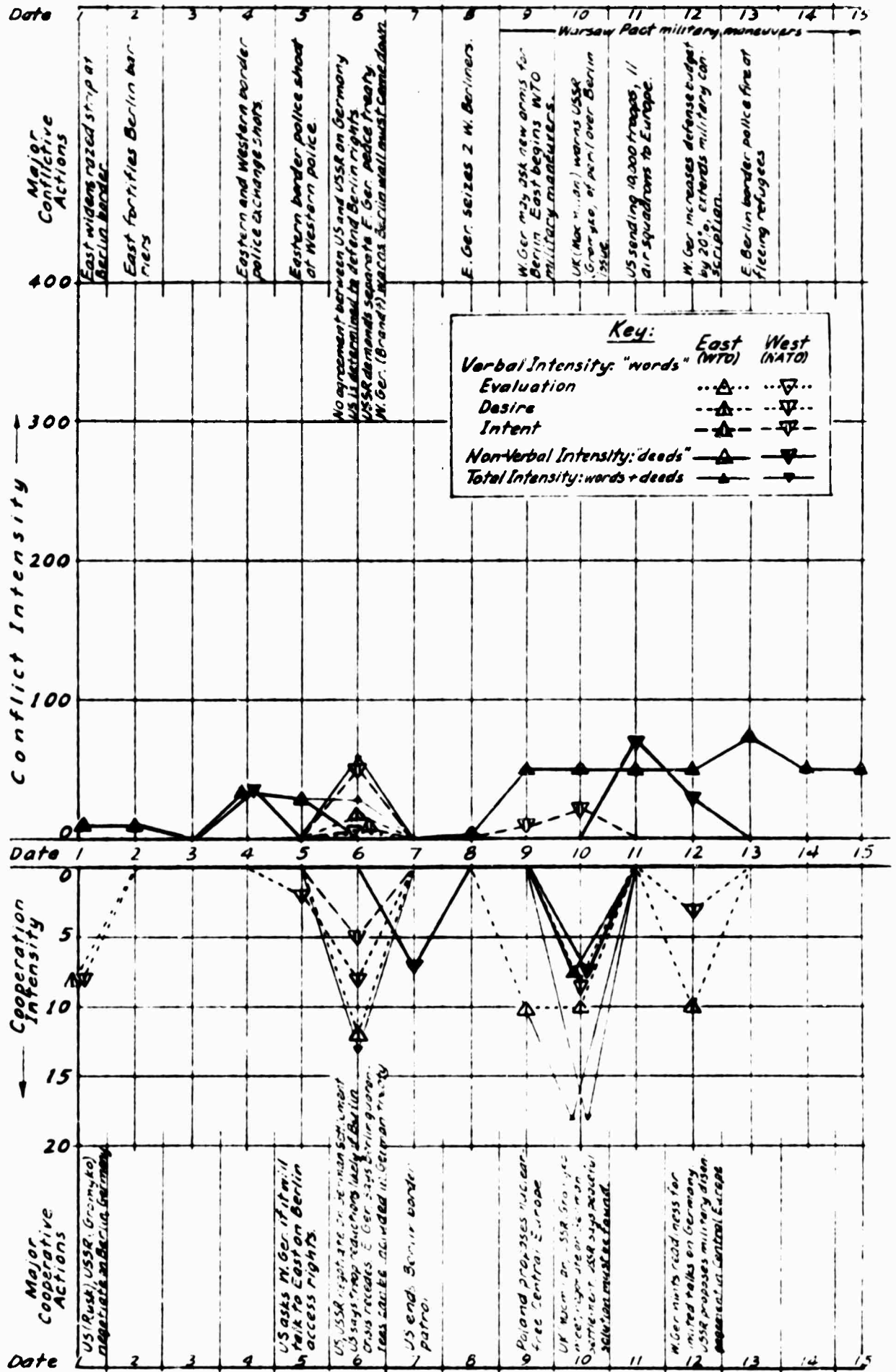


Fig. 3L East-West Interaction during the Berlin Crisis, October 16-31, 1961

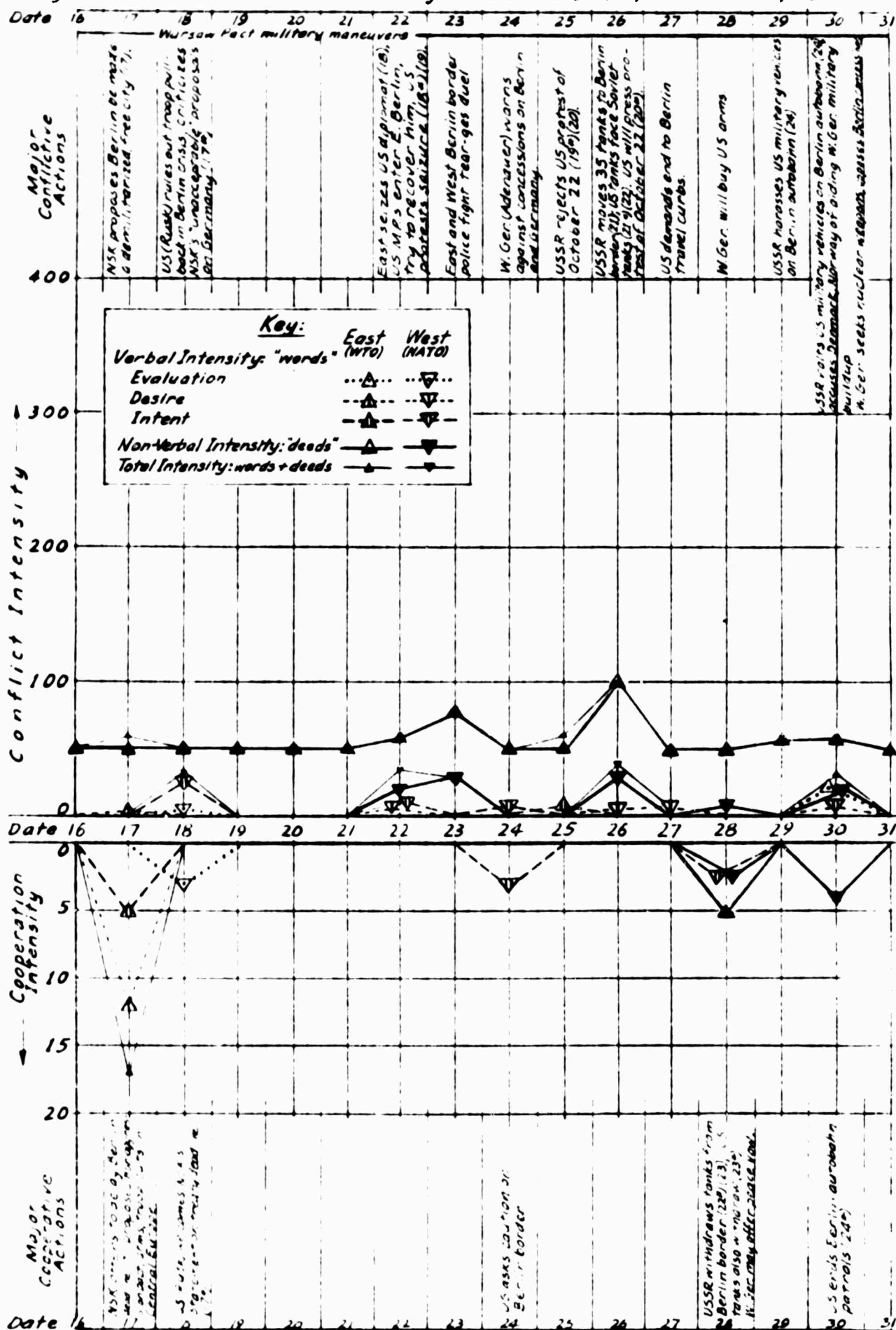


Fig. 3M East-West Interaction during the Berlin Crisis, November 1-15, 1961

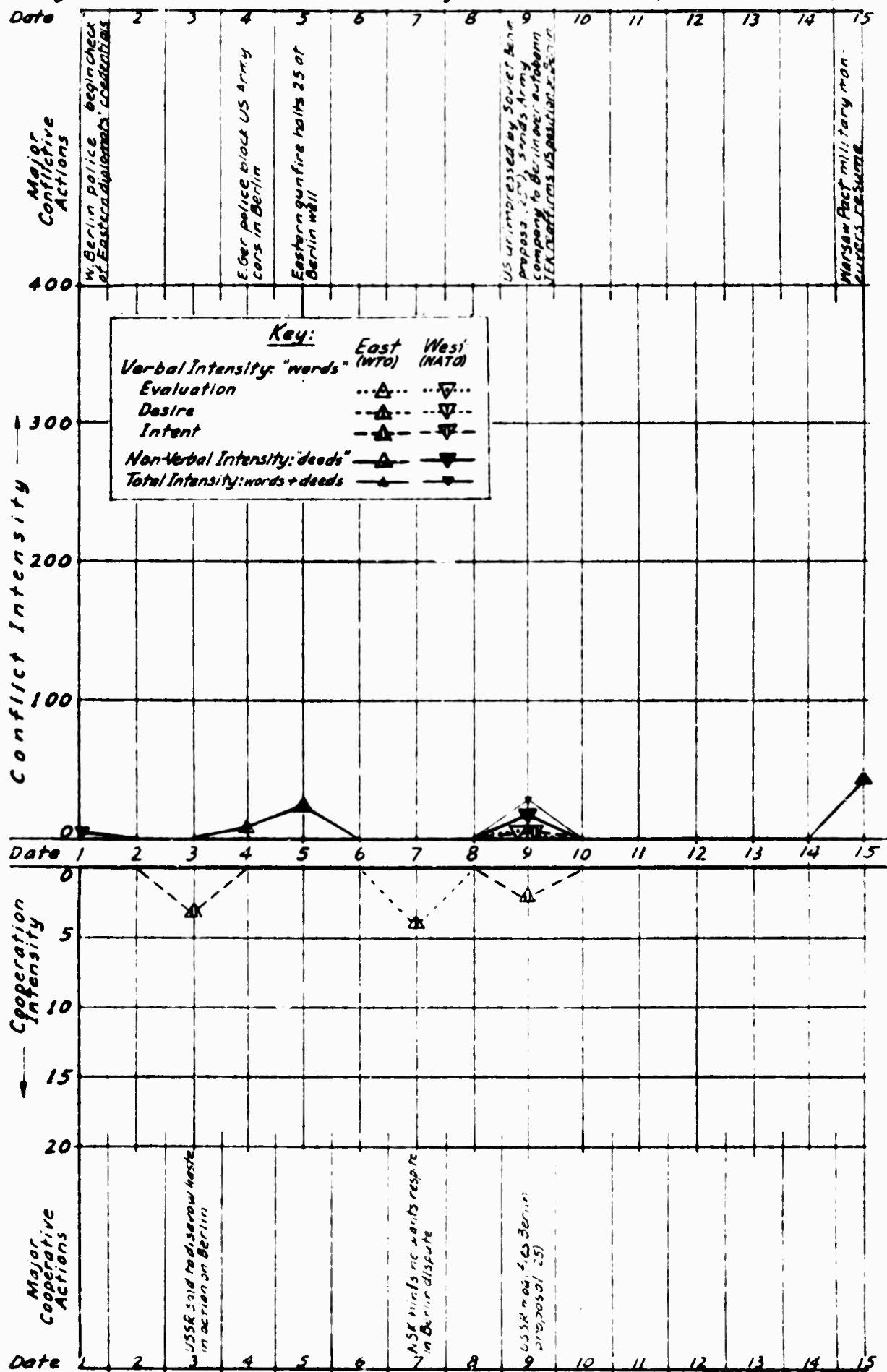


Fig 3N East-West Interaction during the Berlin Crisis, November 16-30, 1961

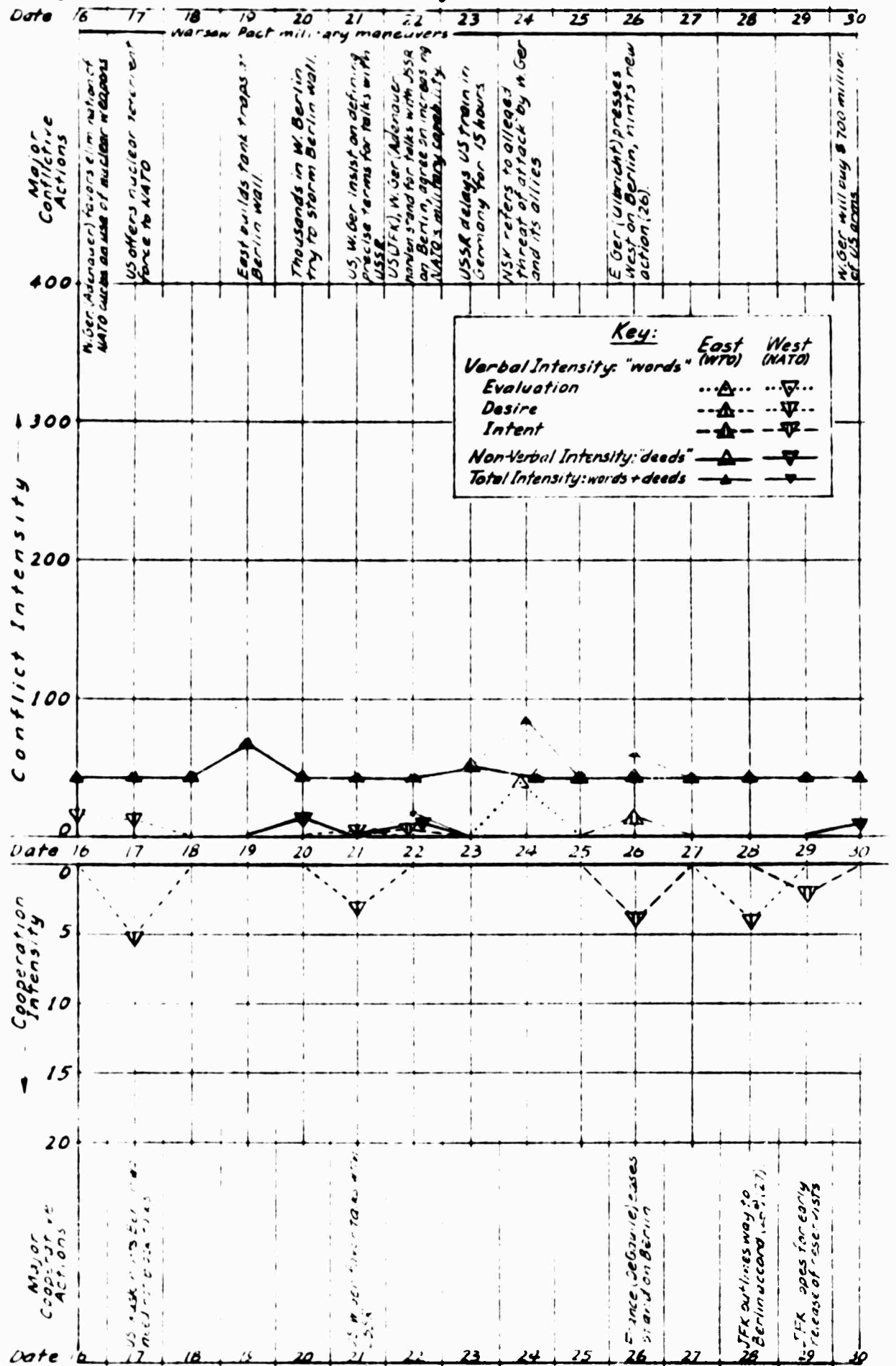


Fig. 30 East-West Interaction during the Berlin Crisis, December 1-15, 1961

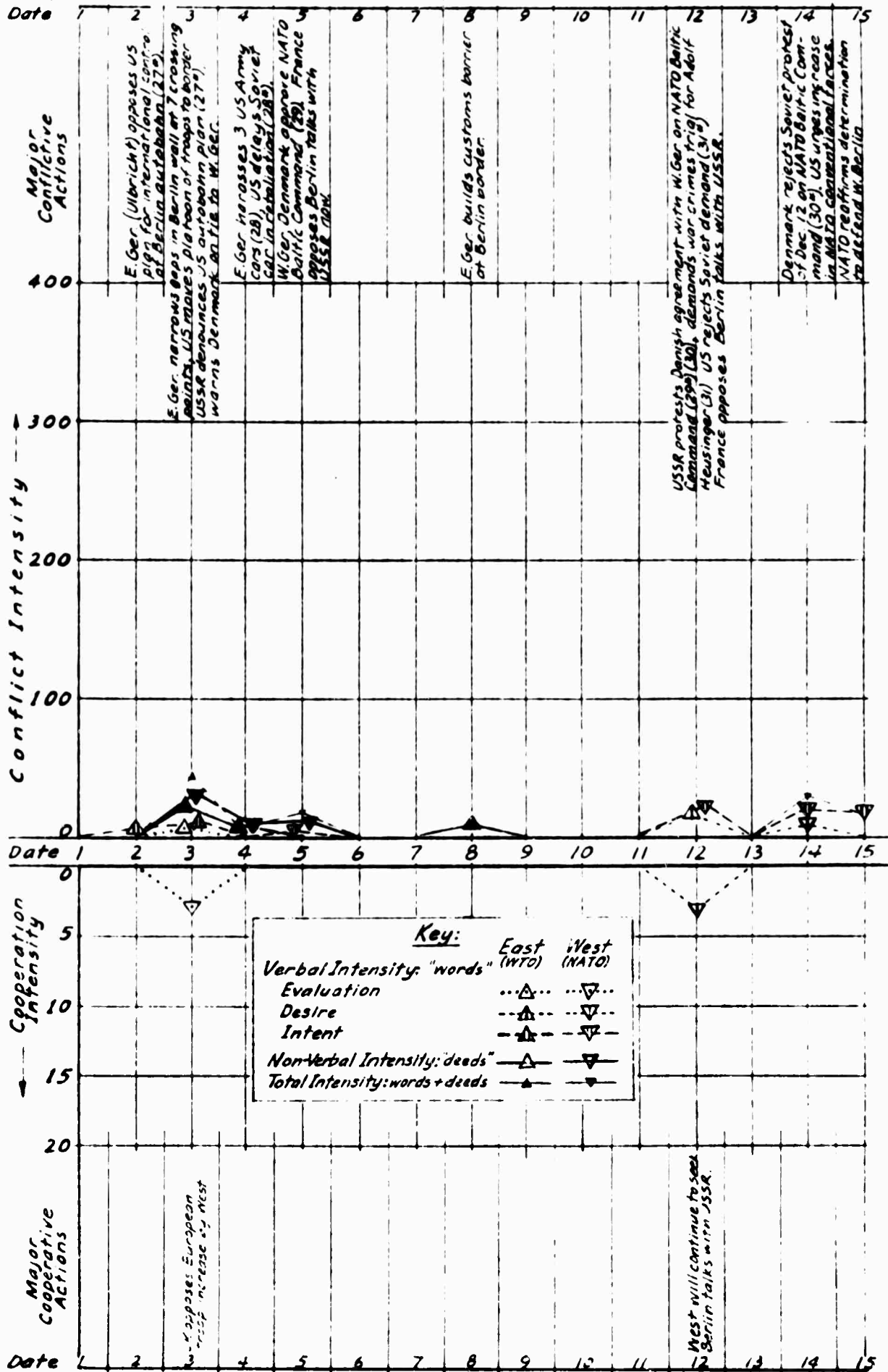
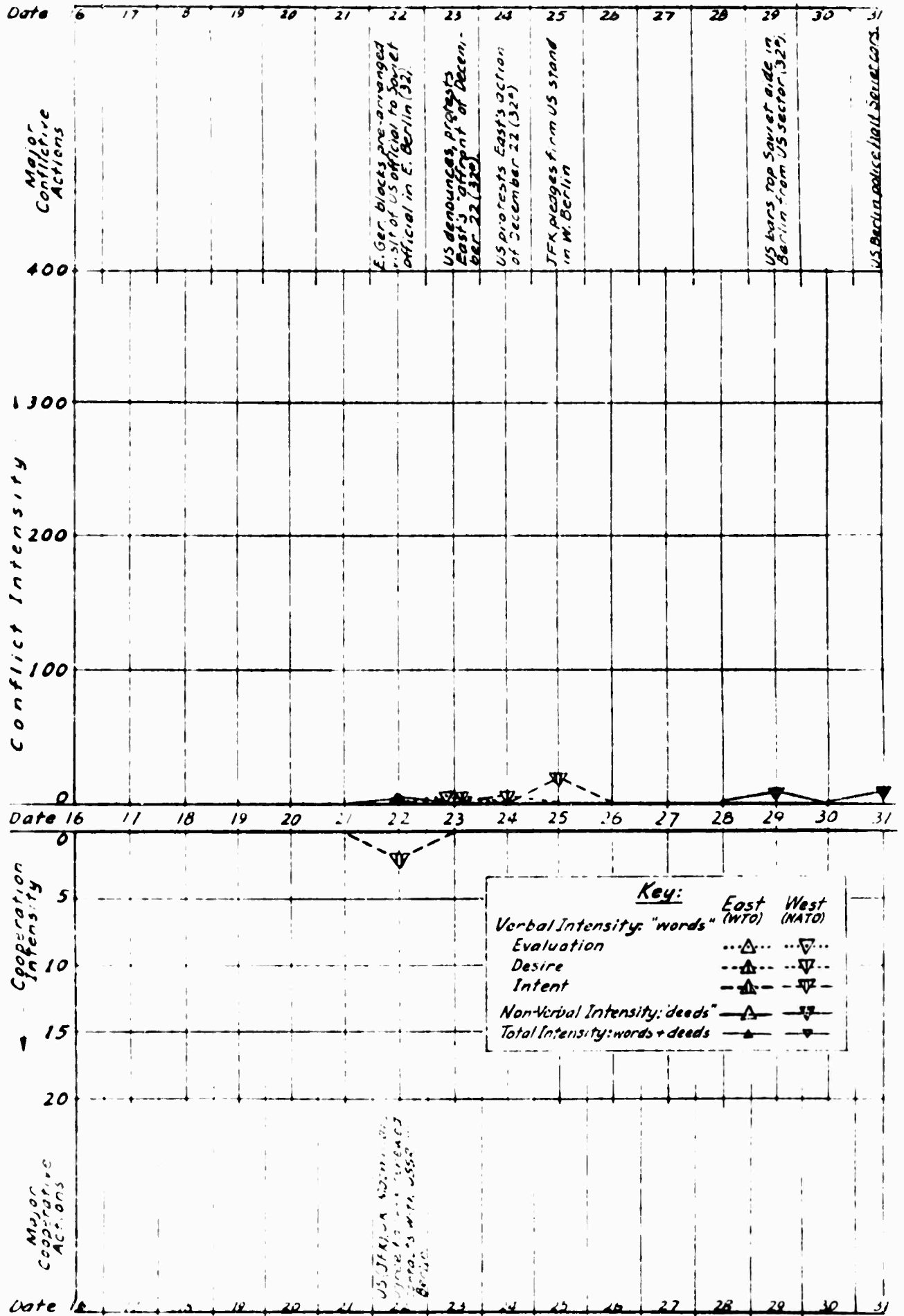


Fig 3P East-West Interaction during the Berlin Crisis, December 16-31, 1961



3.2 An Overview of the Berlin Crisis

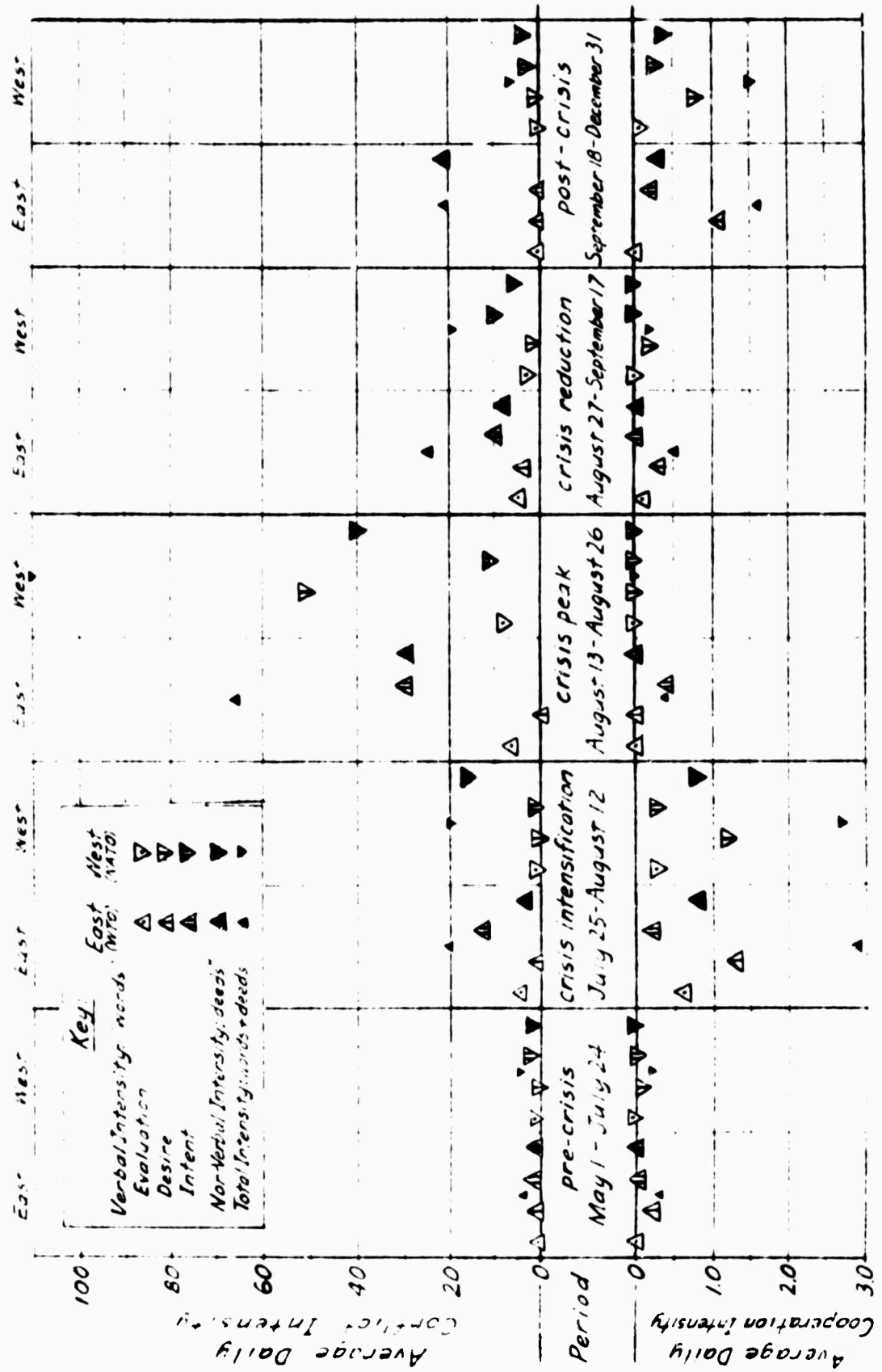
Inspection of Figures 3A through 3P above suggests that East-West interaction over Berlin and Germany can usefully be divided into five periods, based on changes in the composition and intensity of conflict and cooperation between May and December. For East and West, Figure 3Q below gives average daily conflict and cooperation intensities for the four action categories (evaluation, desire, intent and deeds) for each of the five periods. The periods will be referred to as pre-crisis, crisis intensification, crisis peak, crisis reduction and post-crisis. In the analysis that follows, numerical conflict intensities are preceded by a minus sign (-); cooperation intensities are preceded by a plus sign (+).

Conflict Intensity.¹ Total conflict intensity was low for both sides during the pre-crisis period (May 1 - July 24). The daily averages for NATO and WTO were -5 and -4, respectively. During this period, threat intensity was higher than the intensity of the other three conflictive action categories for both NATO and WTO.

The crisis intensification period (July 25 - August 12) began on July 25 with President Kennedy's announcement of U.S. military preparations. In this period, WTO threats were high (-12) compared with the other three action categories. NATO's verbal intensity during the period was low (-3) relative to the intensity of its conflictive deeds (-17).

¹In the following analysis, the term "disapproval" refers to all conflictive statements of evaluation (including the action categories COMMENT (1020), ACCUSE and DENY). The term "demand" refers to all conflictive statements of desire (including the categories REQUEST (3090), PROPOSE (3100), PROTEST and DEMAND). The term "threat" refers to all conflictive statements of intent (including COMMENT (5020), REJECT, WARN and THREATEN).

Figure 5: Average Daily Conflict and Cooperation Intensity during the Berlin Crisis



The crisis peak period (August 13-26) was initiated on August 13 by the East's action sealing the border between East and West Berlin. During this period, WTO threats were high in intensity (-30), disapproval was low (-6) and demands had zero intensity. In contrast, the intensity of NATO demands during this period was high (-51) relative to deeds (-40); threats and disapproval were relatively low (-11 and -9, respectively). In the intensification and crisis peak periods, WTO conflictive actions could be characterized as low demand, high threat, low-to-moderate deeds: WTO demanded little, threatened much, and accompanied its threats with conflictive deeds (including the Berlin border closing). In the crisis intensification period, NATO used few words and used deeds of moderate intensity. NATO's conflictive actions during the crisis peak were characterized by moderately intense deeds (including troop movements), and by high demand and low threat intensity (e.g., frequent protests of the Berlin border closing but few threats of action to counteract it).

The crisis reduction period (August 27 - September 17) began after a series of conflictive NATO actions between August 23 and 26. In this period, NATO and WTO conflict intensity patterns were similar: threats and deeds were relatively high, disapproval and demands were relatively low.

The post-crisis period (September 18 - December 31) was initiated by meetings between Premier Khrushchev and Belgian Foreign Minister Spaak on September 18 and 19. During this period, except for WTO military maneuvers, WTO and NATO conflict intensities were generally low.

In summary, the intensity of WTO threats averaged higher than the intensity of its conflictive deeds in all but the post-crisis period. Throughout the crisis, average WTO threat intensity was equal to or greater than

demand intensity. In contrast, NATO's threat intensity averaged either lower than its deed intensity or lower than its demand intensity in three of the five crisis periods. WTO's total conflict intensity averaged higher than that of NATO in three of the five periods: intensification, reduction and post-crisis.

Cooperation Intensity.¹ The intensity of cooperative actions was low for both sides in the pre-crisis period. In the intensification period, WTO and NATO had similar cooperative intensity patterns—relatively high on desire (proposals for talks on Berlin) and deeds (meetings on Berlin and Germany), low on offers. This period had the highest average cooperation intensity for both sides of any period of the crisis.

In the crisis peak period there were no cooperative actions by NATO; there were only two offers by WTO. The crisis reduction period contained frequent proposals for talks on Berlin and Germany; both sides had similar cooperative intensity patterns. In the post-crisis period the intensity patterns for WTO and NATO were again similar; high on desire, moderately low on offers and deeds, and low on approval.

For all but the crisis peak period, the intensity of proposals was the highest of the four cooperative categories for both NATO and WTO. During the peak period, however, the intensity of WTO offers averaged +0.4; all other WTO and all NATO cooperative categories had zero intensity. The intensity of WTO offers during the crisis peak period was the highest for

¹In the following analysis, the term "approval" refers to all cooperative statements of evaluation (including the categories COMMENT (2020) and APPROVE). The term "proposal" refers to all cooperative statements of desire (including REQUEST (4090), PROPOSE (4100) and NEGOTIATE). The term "offer" refers to all cooperative statements of intent (including COMMENT (6020), OFFER, PROMISE and AGREE).

either side during the eight-month period.

In summary, average cooperation intensity for both sides was highest in the intensification period and next highest in the post-crisis period. Cooperation intensity was moderately low in the reduction period, lower in the pre-crisis period, and lowest during the crisis peak. WTO's average total cooperation intensity was higher than that of NATO for all five periods of the Berlin crisis.

4. CONFLICT AND COOPERATION OVER CUBA, AUGUST-DECEMBER, 1962

4.1 Conflict and Cooperation Intensity Scores

Daily conflict and cooperation intensity scores for each of the four types of action are plotted below for East (WTO) and West (NATO) in a series of ten charts covering the period August through December, 1962. Each chart covers a two-week period. Only actions related to the Cuban situation are included. The charts were compiled from a chronology of 168 events.

The Cuban crisis was primarily a United States-Soviet confrontation rather than a confrontation between the NATO and WTO alliances. Most actions during the crisis were taken by the U.S. and the U.S.S.R. In the analysis that follows, therefore, "NATO" and "West" refer primarily to the U.S.; "WTO" and "East" refer primarily to the U.S.S.R.

In addition to giving intensity data, the charts below identify the major conflictive and cooperative actions by day. Conflictive actions that continued for more than one day (e.g., Soviet military aid to Cuba, the U.S. naval quarantine of Cuba) are shown at the top of the charts during the time they continued. For each day that a conflictive action continued, its intensity score was included in the daily conflict intensity score. Symbols for the different types of action intensity for East and West are shown in the key on each chart. On the charts, conflict intensity increases upward from the horizontal line of zero intensity; cooperation intensity increases downward from the zero line.

Data Sources. The four principal sources for actions used to compute the intensity scores are given below. The references are listed in rough order of importance as comprehensive sources of events related to the Cuban crisis:

The New York Times.

David L. Larson (ed.), The "Cuban Crisis" of 1962: Selected Documents and Chronology (Boston: Houghton-Mifflin, 1963).

Deadline Data on World Affairs.

The World Almanac and Book of Facts, 1962 and 1963 (New York World-Telegram Corporation).

Fig. 4A East West Interaction during the Cuban Crisis, August 1-15, 1962

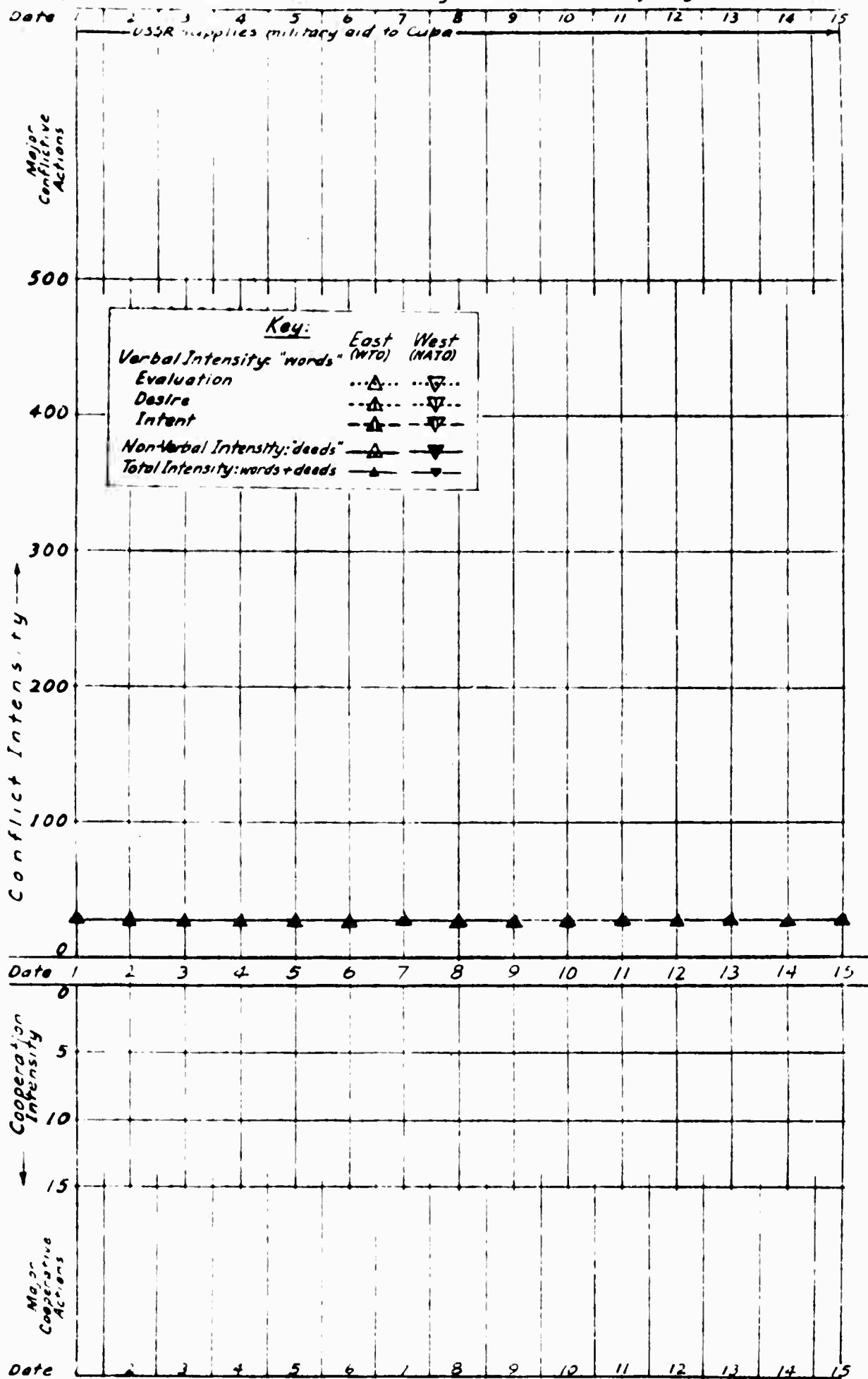


Fig. 48 East-West Interaction during the Cuban Crisis, August 16-31, 1962

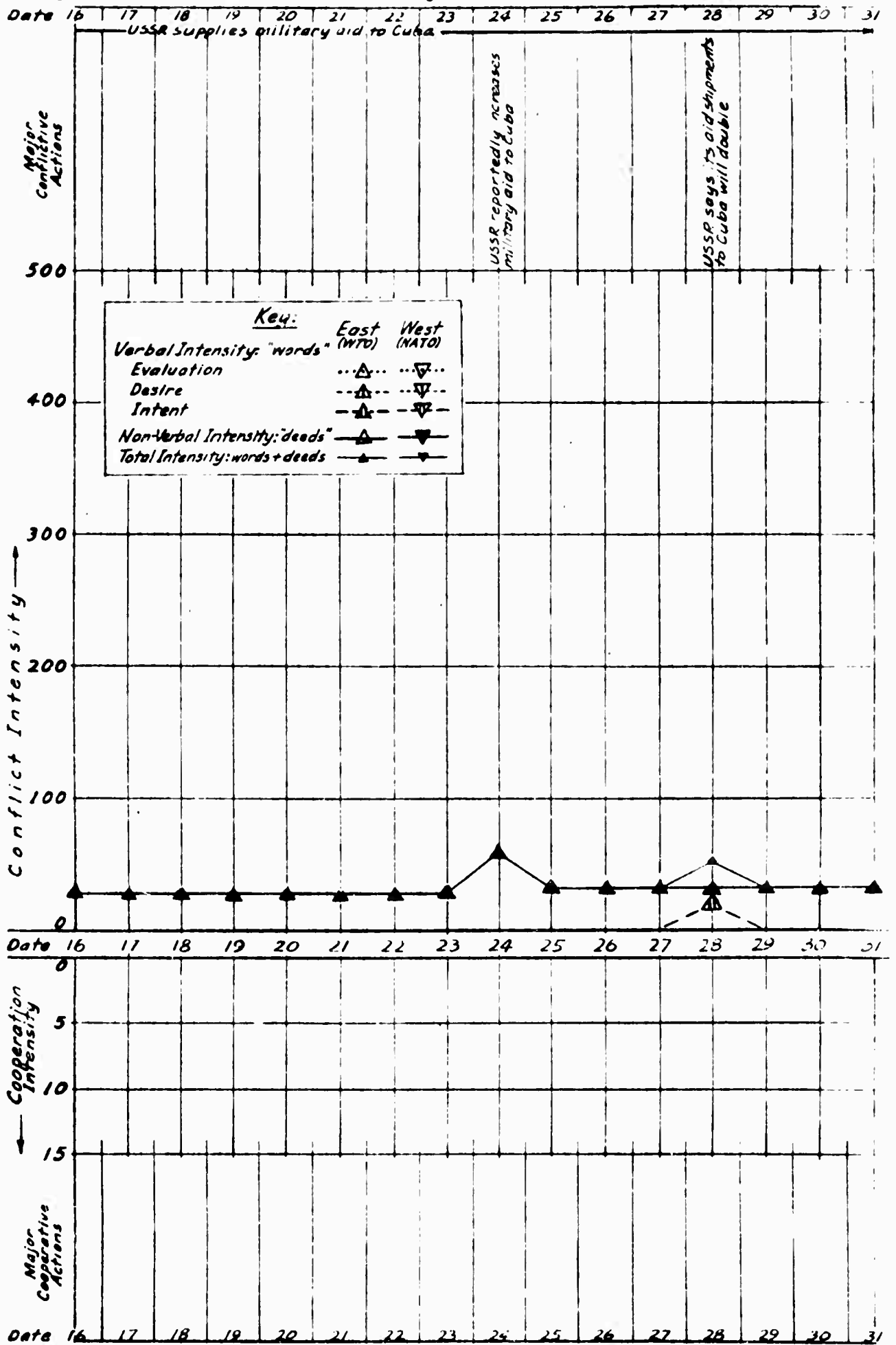


Fig. 4C East-West Interaction during the Cuban Crisis, September 1-15, 1962

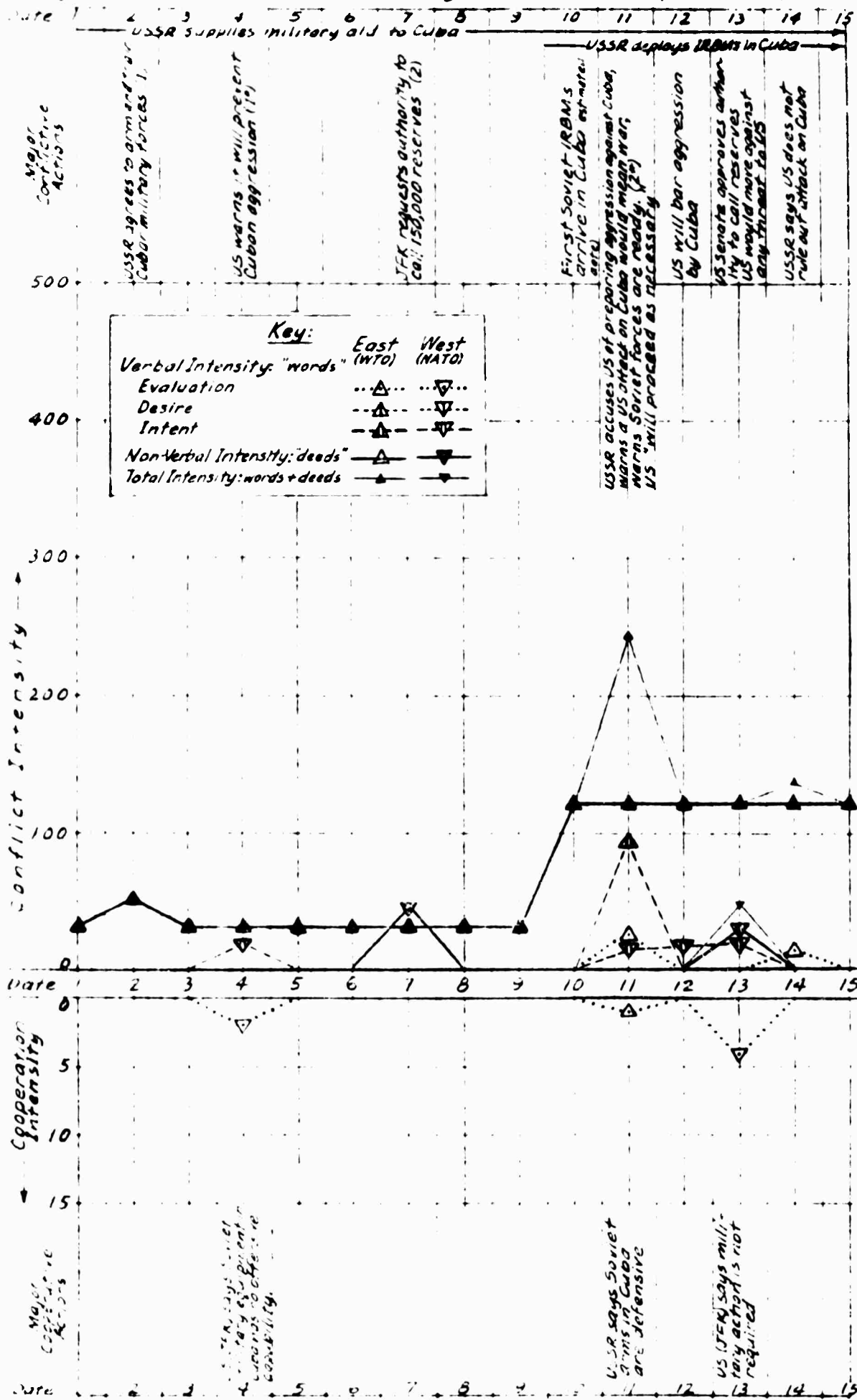


Fig 4D East-West Interaction during the Cuban Crisis, September 16-30, 1962

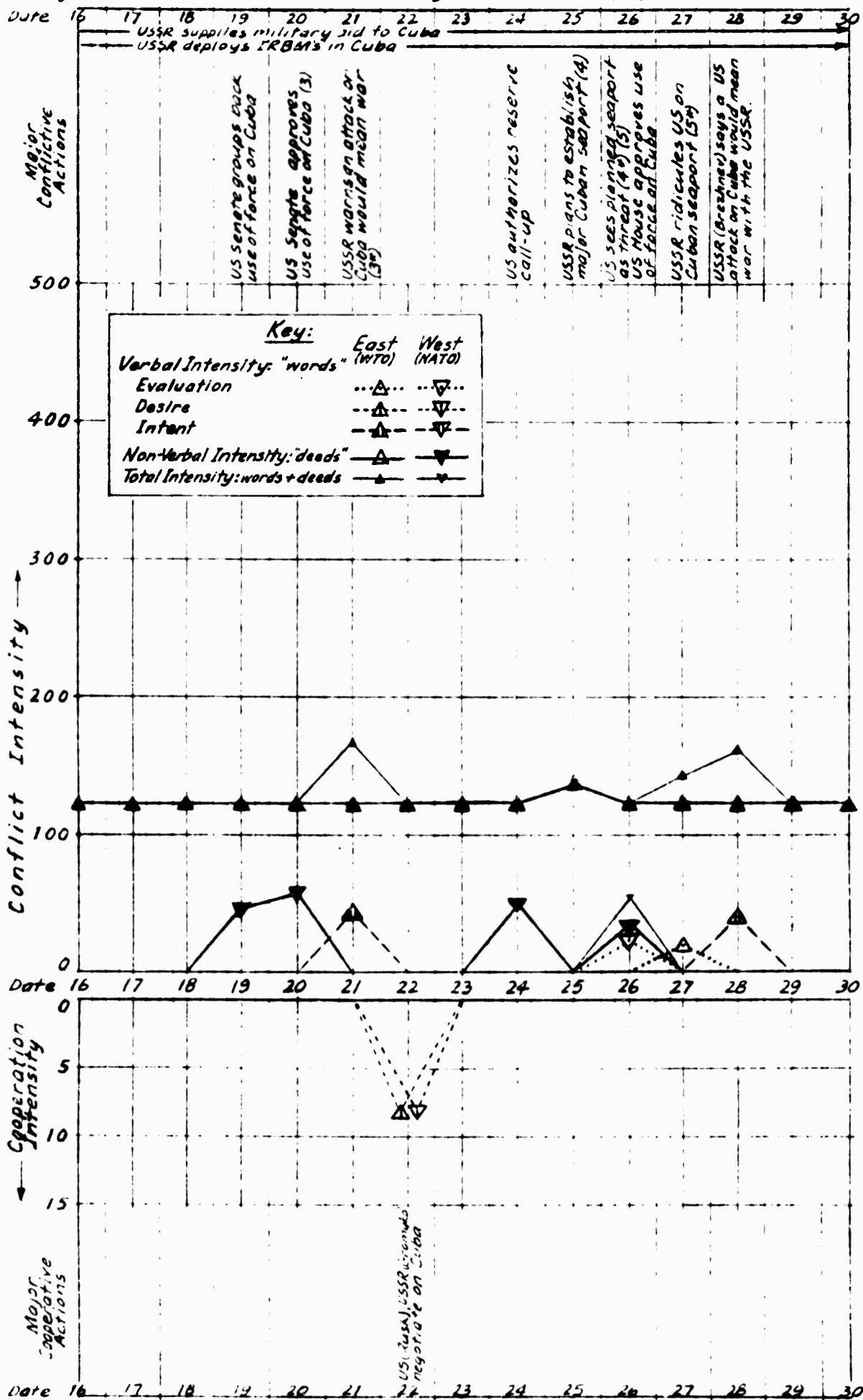


Fig. 4E East-West Interaction during the Cuban Crisis, October 1-15, 1962

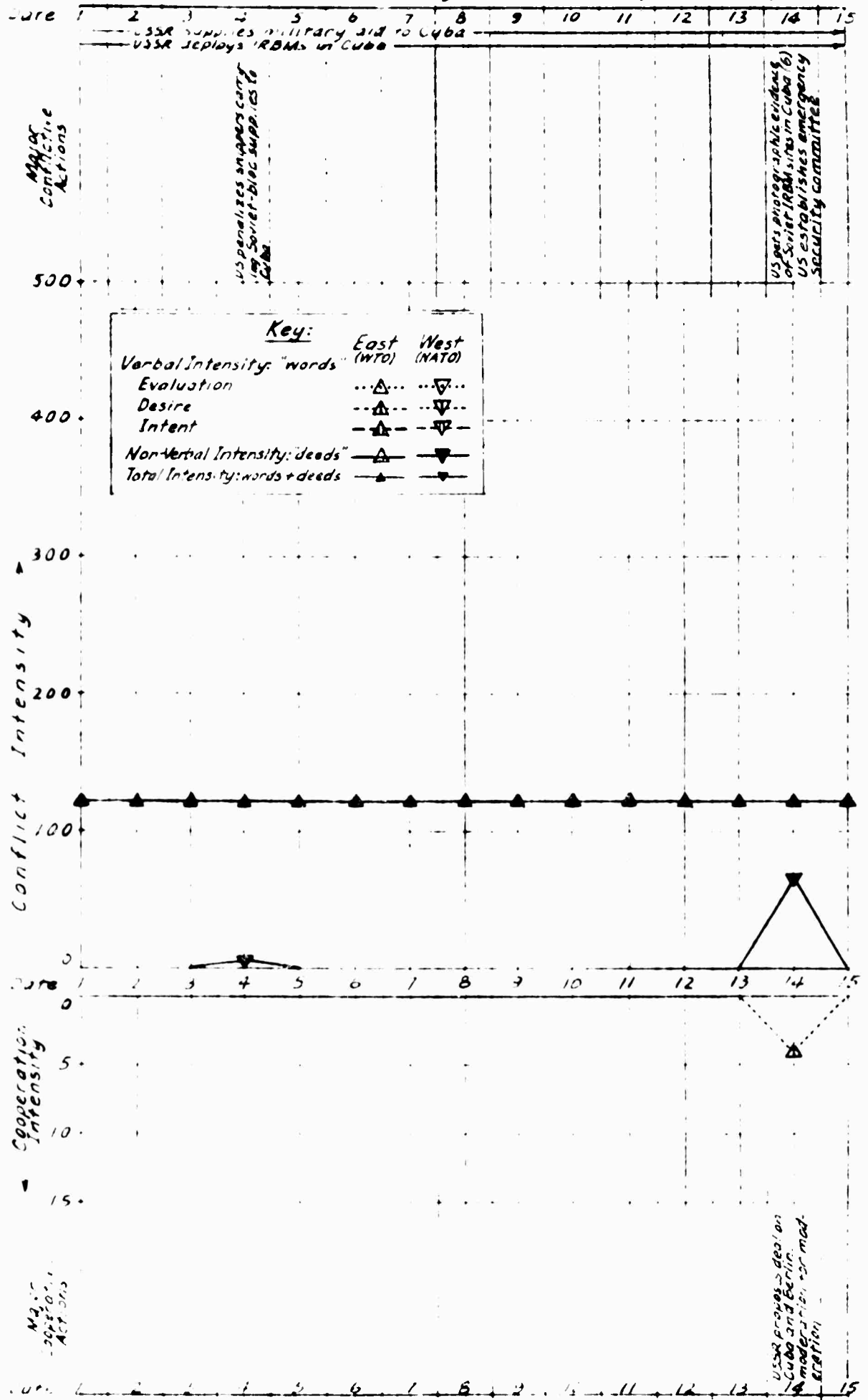


Fig. 4F East-West Interaction during the Cuban Crisis, October 16-31, 1962

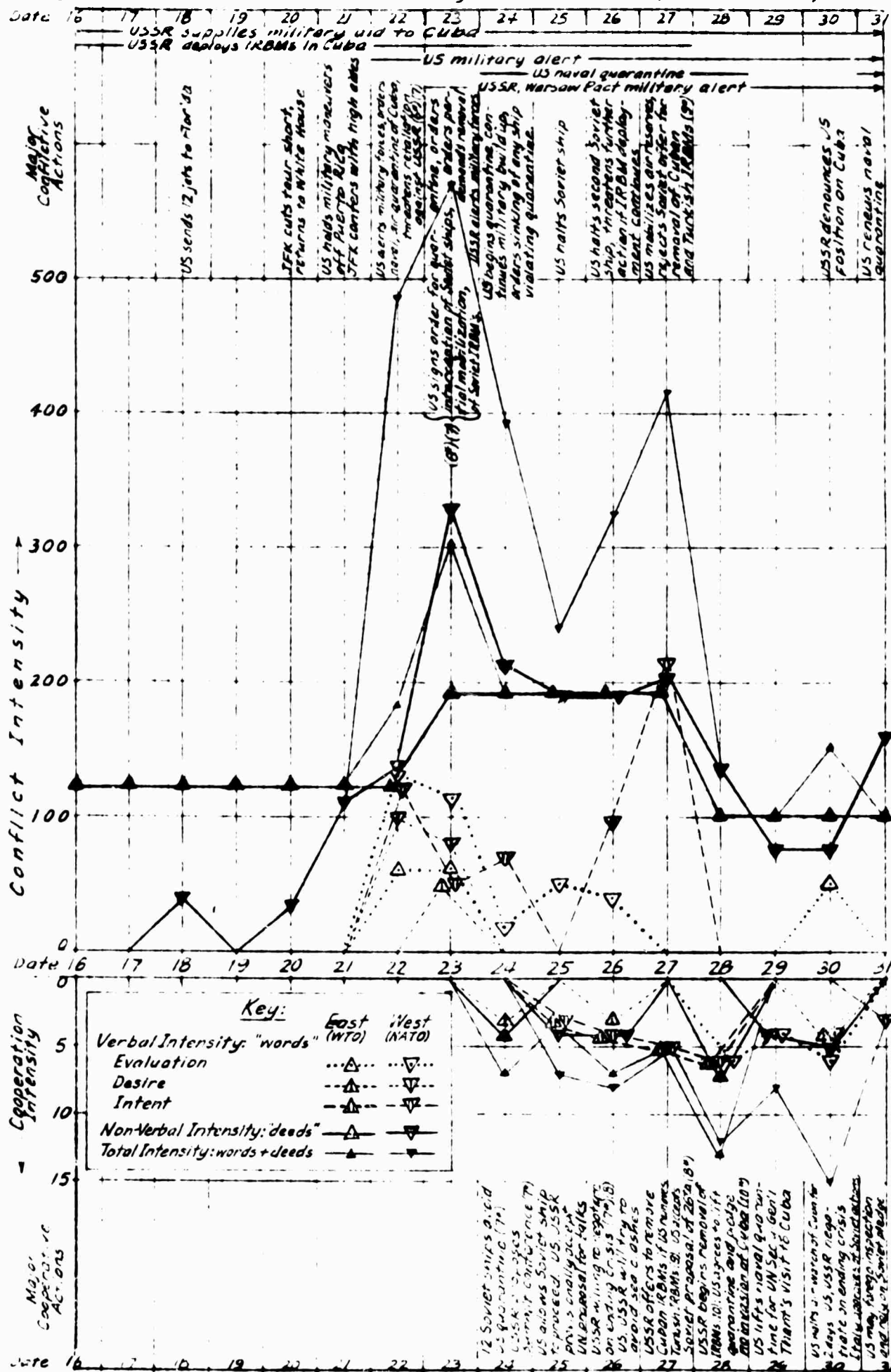


Fig. 4H East-West Interaction during the Cuban Crisis, November 16-30, 1962

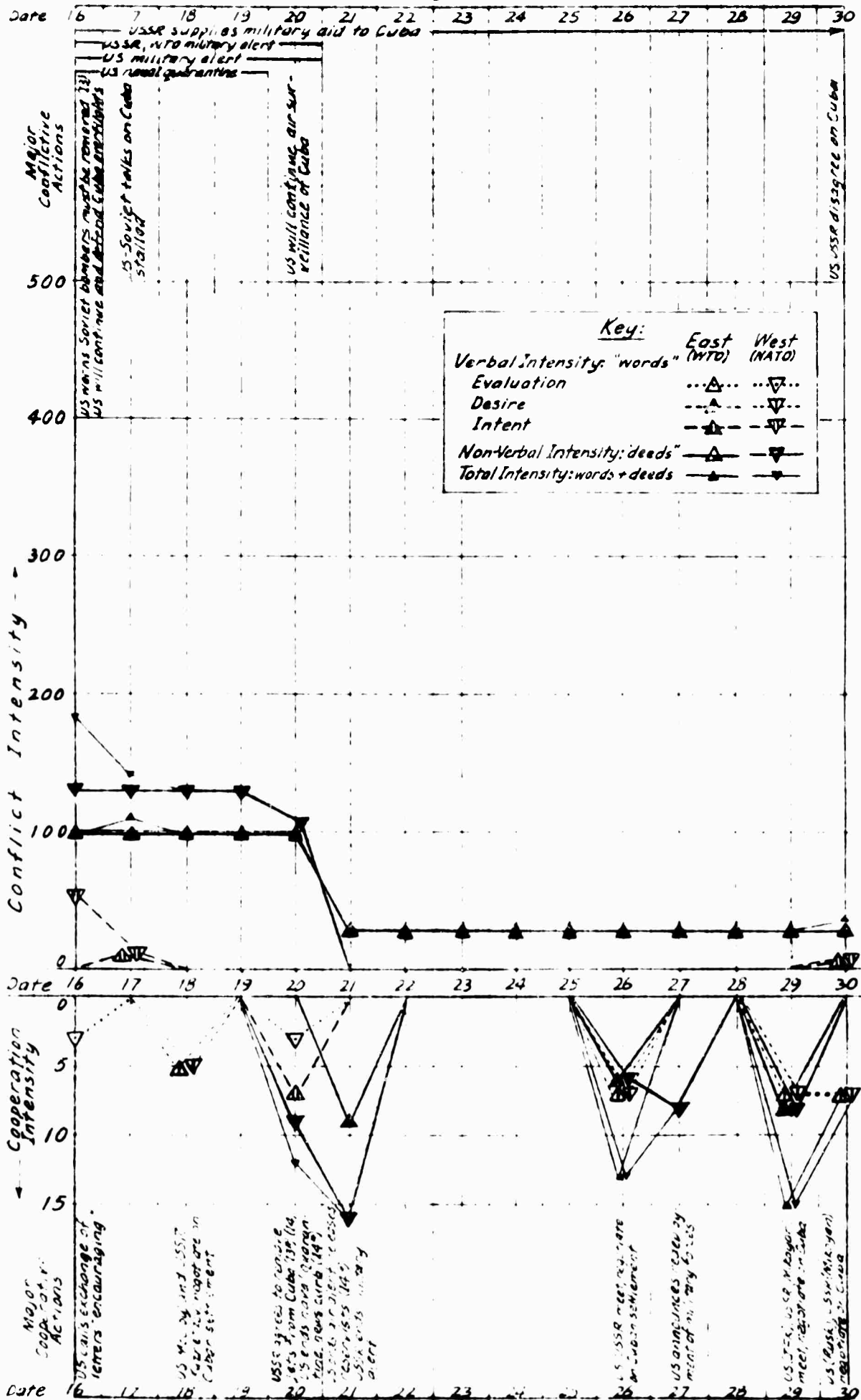


Fig. 41 East-West Interaction during the Cuban Crisis, December 1-15, 1962

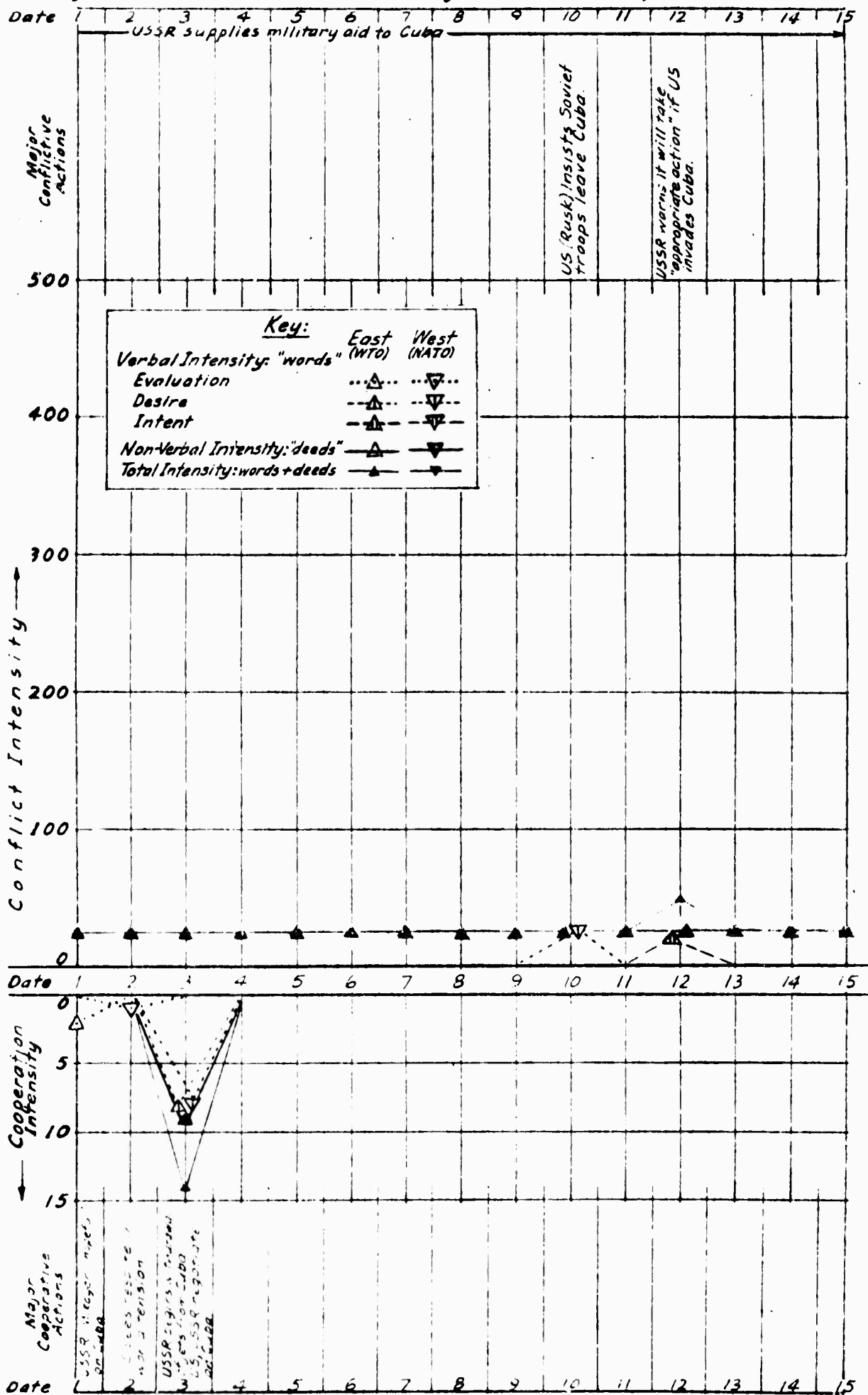
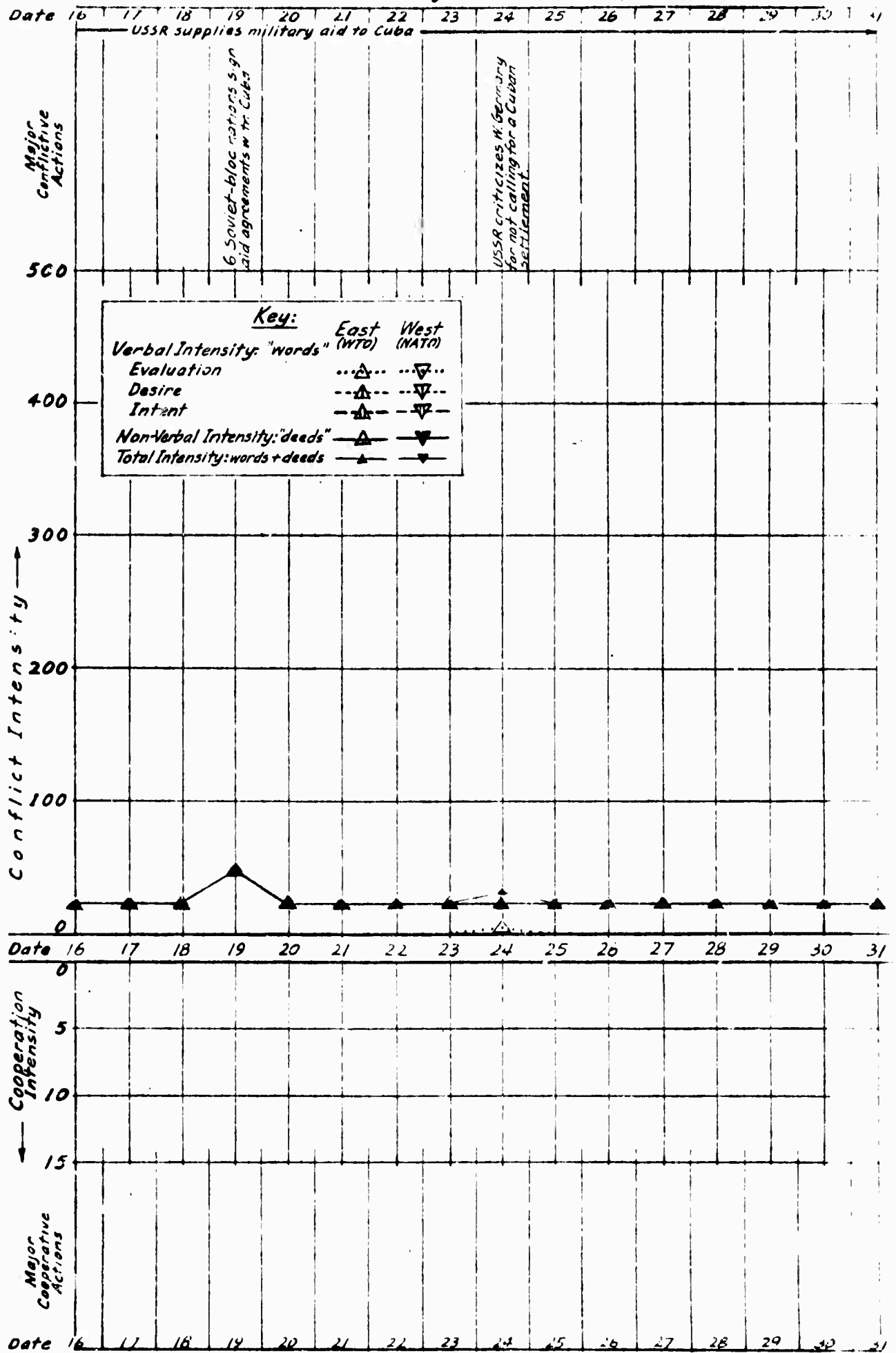


Fig. 4J East-West Interaction during the Cuban Crisis, December 16-31, 1962



4.2 An Overview of the Cuban Crisis

Inspection of Figures 4A through 4J above suggests that East-West interaction over Cuba can readily be divided into the same five periods used in the Berlin analysis, viz., pre-crisis, crisis intensification, crisis peak, crisis reduction and post-crisis. For East and West, Figure 4K below gives average daily conflict and cooperation intensities for the four action categories (evaluation, desire, intent and deeds) for each of the five periods. In the analysis that follows, numerical conflict intensities are preceded by a minus sign (-); cooperation intensities are preceded by a plus sign (+).

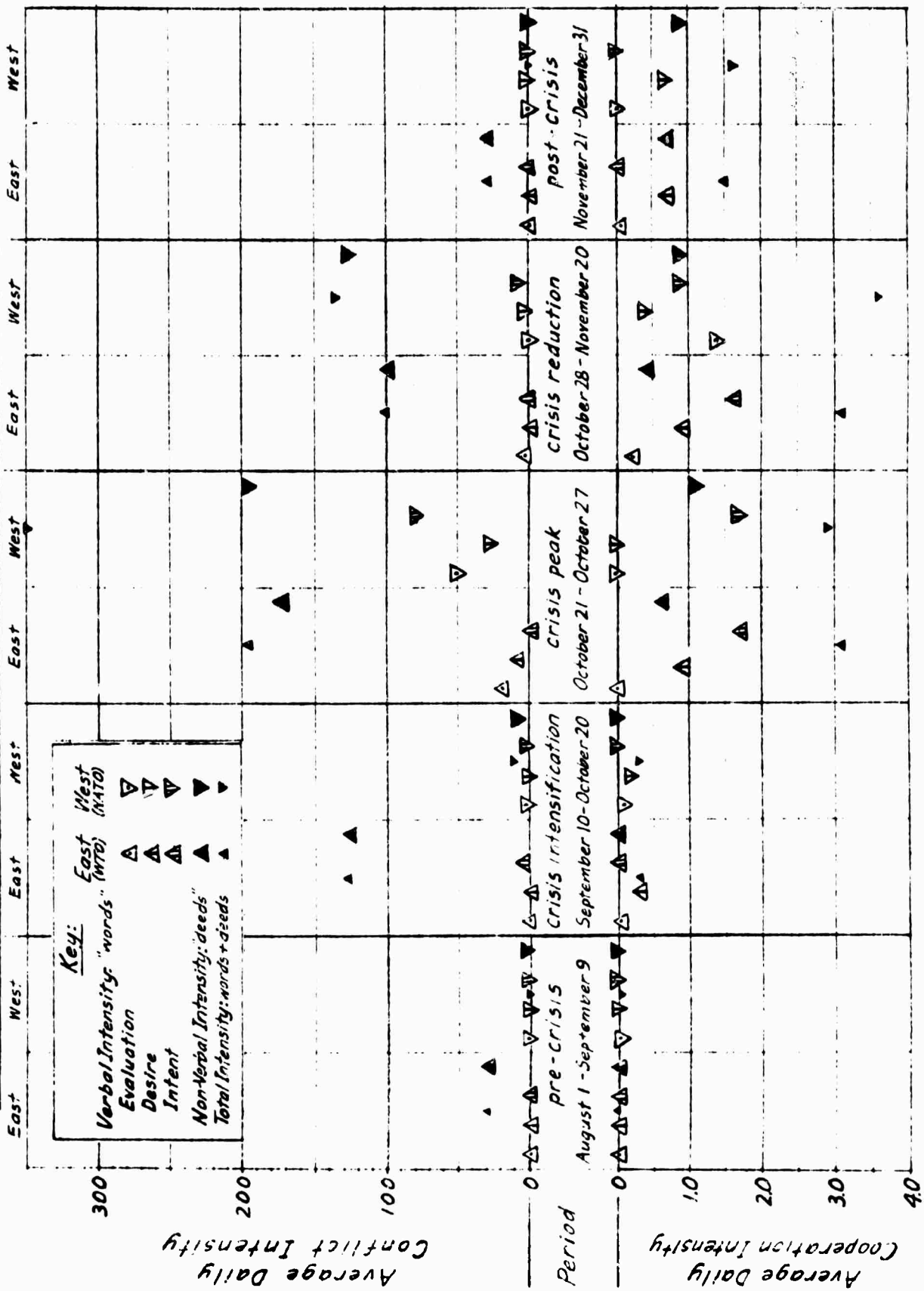
Conflict Intensity.¹ Continuing Soviet military aid to Cuba was the salient aspect of the pre-crisis period (August 1 - September 9). There were only five discrete actions recorded for the period; they were all conflictive and occurred between August 24 and September 7.

The main feature of the crisis intensification period (September 10 - October 20) was the introduction of Soviet intermediate-range ballistic missiles (IRBM's) into Cuba, which probably began about September 10. Except for Soviet warnings on September 11, 21 and 26, there were few discrete WTO actions during this period. The U.S. carried out several conflictive deeds during the period; these included approving the use of force on Cuba and authorizing a military reserve call-up. The intensity of conflictive verbal actions was relatively low for both sides during the intensification period (the daily averages were below -6).

The crisis peak period (October 21-27) began with U.S. military maneuvers off Puerto Rico on October 21. On October 22, President Kennedy

¹As in Part 3, "disapproval" refers to all conflictive statements of evaluation, "demand" refers to all conflictive statements of desire, and "threat" refers to all conflictive statements of intent. See p. 35n.

Figure 4K Average Daily Conflict and Cooperation Intensity during the Cuban Crisis



announced the presence of Soviet IREB's in Cuba and outlined the U.S. response (including a military alert and a naval and air quarantine of Cuba). During the crisis peak period, the intensity of NATO conflictive actions exceeded that of WTO in all four action categories. The highest verbal intensity for NATO was for threats and warnings (daily average, -73). In contrast, the highest verbal category for WTO was disapproval (daily average, -17). WTO used no threats or warnings in the peak period. U.S. actions during the period could be characterized as high deed, high threat, moderate demand and disapproval. In contrast, Soviet actions could be characterized as high deed, no threat, low demand and disapproval.

The crisis reduction period (October 28 - November 20) began on October 28 when the U.S.S.R. began to remove its IREB's from Cuba. During this period, conflictive deed intensity remained high on both sides, averaging -126 for NATO and -99 for WTO. Conflictive deeds continuing through the period included the U.S. military alert and naval quarantine, and the WTO military alert. The intensity of conflictive words was low for both sides.

The post-crisis period (November 21 - December 31) began with the termination of the U.S. naval quarantine and the U.S. and WTO military alerts on November 19 and 20. Except for continuing Soviet military aid to Cuba, the intensity of all conflictive action categories during the period was low or zero. There were no NATO conflictive deeds recorded during the post-crisis period.

In summary, the intensity of WTO conflictive words was low throughout the Cuban crisis, both absolutely and relative to the intensity of deeds. The intensity of NATO conflictive words was also low in all except the crisis

peak period. In three of the five periods, the intensity of WTO conflictive actions exceeded that of NATO. Only during the crisis peak and reduction periods was NATO conflict intensity higher than that of WTO. During the five-month period, NATO used threats or warnings on 17 days and demands on seven days. In contrast, WTO used threats or warnings on only seven days and used only one demand.

Cooperation Intensity.¹ There was only one cooperative action (by the U.S.) recorded for the pre-crisis period. In the intensification period only four cooperative events were recorded: three statements and a meeting between the U.S. and the U.S.S.R.

In the crisis peak period, there was significant cooperation intensity for both sides. WTO cooperative actions included proposals, offers and deeds; NATO actions included offers and deeds. Total daily cooperation intensity averaged slightly higher for WTO (+3.1) than for NATO (+2.9).

In the crisis reduction period, total cooperation intensity averaged +3.1 for WTO and +3.6 for NATO. WTO's cooperation intensity pattern was similar in both the crisis peak and reduction periods: relatively high for offers, moderate for proposals and deeds, and low for approval. NATO intensity during crisis reduction was relatively high for approval, moderate for offers and deeds, and relatively low for proposals.

In the post-crisis period, NATO and WTO had similar cooperation intensity patterns: moderate intensity for proposals and deeds, and low or zero intensity for approval and offers.

¹As in Part 3, "approval" refers to all cooperative statements of evaluation, "proposal" refers to all cooperative statements of desire, and "offer" refers to all cooperative statements of intent. See p. 38n.

In summary, there was only one cooperative action in the pre-crisis period; there were relatively few during intensification. There was substantial cooperation in the peak, reduction and post-crisis periods. The intensity of NATO cooperative deeds was higher than that of WTO in each of the last three periods.¹

¹This is primarily because NATO initiated more different conflictive deeds during the crisis than WTO (including the U.S. naval quarantine, air surveillance, reserve call-up and military alert). The subsequent termination of each of these activities was rated as a cooperative action, adding to the intensity of NATO cooperative deeds. Some WTO actions during the crisis (e.g., reserve call-ups) may not have been reported in the West. If such actions did occur, their inclusion would of course increase WTO conflict intensity early in the crisis and add to WTO cooperation intensity in the later stages.

5. THE BERLIN AND CUBAN CRISES COMPARED: PREDICTING CRISIS BEHAVIOR

The following pages present a comparative summary of the Berlin and Cuban crises. The author considers how WTO and NATO actions at particular times during the crises might have been used to predict later actions by East and West. The paper concludes by summarizing the indicators used in the analysis, and suggesting ways in which the indicators might be useful in crisis prediction and management.

5.1 Duration

In the overall context of postwar East-West relations, conflict over Berlin has been a relatively persistent phenomenon since World War II. There have been several periods of relatively intense conflict over Berlin since 1945, most notably during 1948-1949, 1952-1953, 1955, and 1960, prior to the 1961 crisis.¹ In contrast, East-West conflict over Cuba has generally been restricted to the period between 1960 and 1962.²

The 1961 Berlin crisis was, therefore, part of a continuing conflict situation. The charts in Section 3.1 indicate that the Berlin conflict became active in early June, 1961, and returned to relative quiescence in late December. The charts in Section 4.1 show that the Cuban situation became active in late August, 1962 and quiescent in December.³ In terms of these dates, the Berlin crisis lasted longer than the Cuban crisis (about seven months compared with between four and five months). Figure 5A below compares the two crises in terms of the length of the intensification, peak and reduction periods identified in Parts 3 and 4.

¹See McClelland (1967) for a quantitative analysis of conflict over Berlin between 1948 and 1963.

²For an analysis of the frequency of postwar conflictive and cooperative interaction between East and West for eight geographic areas including Latin America and Berlin-Germany, see Corson (1968).

³On January 7, 1963 the U.S. and the U.S.S.R. issued a joint statement formally ending direct negotiations on the Cuban crisis.

Figure 5A

Length of Crisis Periods for Berlin and Cuba

Period	Length of Period in Days	
	Berlin	Cuba
intensification	19	41
peak	14	7
reduction	22	24
Total	55	72

In terms of these three periods, the Cuban crisis lasted somewhat longer than the Berlin crisis. The peak period of the Berlin crisis, however, lasted twice as long as the peak period of the Cuban crisis.

5.2 Number of Actions

The author recorded nearly twice as many actions for the Berlin crisis (328) as for the Cuban crisis (168). Interaction over Berlin consisted mostly of discrete actions (except for WTO military maneuvers), while interaction over Cuba included a number of actions that continued over time (including Soviet military aid to Cuba, the WTO and U.S. military alerts, and the U.S. naval quarantine).¹

5.3 Political and Military Actions

All actions in the study were coded for one of the six "resource-areas" listed in Section 2.3. As the reader will recall, the coding indicates the type of resource used as a basis of influence or control by the actor. Of the 328 actions coded for the Berlin crisis, 59% were in the political-legal resource-area; 39% were in the military resource-area. In contrast, of the 168 actions coded for Cuba, only 12% were political-legal, while 84% were military. The Berlin crisis could be considered as primarily a political-legal confrontation over control of Berlin. In the Berlin crisis, military resources were used mainly to support political objectives.

¹For Berlin, 55% of the actions recorded were by NATO; 45% were by WTO. For Cuba, 64% were by NATO; 36% were by WTO. The addition of Eastern news sources (e.g., Pravda) to the study might have added additional WTO actions to the Berlin and Cuban event chronologies that were not reported in the Western press (e.g., emergency meetings, reserve call-ups).

In contrast, the Cuban crisis was basically a military confrontation involving competition for military capability which might be used in support of political objectives.

5.4 Conflict Intensity

The highest total conflict intensities for any one day during the Berlin crisis were -260 for WTO (August 13) and -388 for NATO (August 17). The corresponding figures for the Cuban crisis are -302 for WTO and -571 for NATO (both on October 23). The average daily total conflict intensity during the Berlin crisis peak period was -66 for WTO and -111 for NATO (see Figure 3Q). For Cuba the corresponding intensities are -196 for WTO and -349 for NATO (see Figure 4K). The peak period of the Cuban crisis was half as long as that of Berlin, and 3.1 times higher in average daily conflict intensity.

Comparison of Figures 3Q and 4K suggests similarities and differences between Berlin and Cuba. For both crises, average conflict intensity was lowest in the pre- and post- crisis periods, moderate in the intensification and reduction periods, and highest in the peak period. Total conflict intensity in all periods averaged higher for Cuba than for Berlin. Except for NATO verbal conflict intensity during the peak period of the Cuban crisis, the intensity of conflictive words was higher for Berlin in all periods for NATO and WTO.

For Berlin, conflictive words had higher intensity than conflictive deeds during all except the post-crisis period (for both sides) and except for NATO during intensification. In contrast, for Cuba conflictive deeds had higher intensity than conflictive words in all periods except for NATO in the post-crisis period. In summary, Berlin was largely a verbal crisis compared with Cuba.

This conclusion is consonant with the finding in Section 5.3 that Berlin was largely a political crisis, whereas Cuba was mainly a military confrontation. Thus Berlin was largely a political confrontation in which both sides tried verbally to justify their political positions. Cuba was primarily a military crisis in which, for the U.S.S.R., it was important

not to publicize military preparations through verbal actions. In the crisis peak period, of course, the U.S. did publicize its military actions. This was reflected in the high intensity of U.S. threats and warnings during the peak period.

5.5 Cooperation Intensity

Figures 3Q and 4K show distinct differences in the intensity and composition of cooperative actions between the Berlin and Cuban crises. For Berlin, most cooperative actions occurred during the intensification and post-crisis periods; there were relatively few in the pre-crisis, peak and reduction periods. The distribution of cooperative actions during the Berlin crisis suggests that serious efforts to control or resolve the Berlin situation occurred just before and well after the crisis peak.

In contrast, in the Cuban crisis there was substantial cooperation in each of the last three periods, but especially in the peak and reduction periods. Cooperation intensity in these two periods averaged somewhat higher than the highest intensity during the Berlin crisis. These differences may be related to differences in conflict intensity between the two crises. Conflict intensity during the peak of the Cuban crisis may have been so high that both sides cooperated to avoid war. Conflict intensity during the Berlin crisis peak may have been low enough so that neither side felt immediate cooperation was required to prevent war.

In all but the peak period of the Berlin crisis, the intensity of proposals was high relative to other cooperative categories for both NATO and WTO. For Cuba, the intensity of proposals was relatively high only in the intensification and post-crisis periods. In the peak and reduction periods, the intensity of offers was moderate or high relative to other categories for both sides. The higher intensity of offers relative to proposals in the Cuban crisis suggests a greater commitment to cooperative deeds on Cuba than on Berlin.

5.6 Patterns of Cooperation

Although total cooperation intensity for the Berlin crisis was highest during intensification and next highest in the post-crisis period, the

frequency of interdependent cooperative interaction was highest in the post-crisis period and next highest during intensification. For Cuba, cooperation intensity generally corresponded to cooperative interaction frequency; both were high in the crisis peak and reduction periods and early in the post-crisis period. Comparison on cooperation in the two crises generally supports the conclusion in Section 5.5 that no real cooperative effort was made to resolve the Berlin crisis in the peak period. In the Cuban case, however, cooperative interaction during the crisis peak and early in the reduction period indicated commitment on both sides to de-escalate the crisis.

5.7 Bargaining

For analytic purposes, "bargaining" is assumed to have occurred during the Berlin and Cuban crises on any day on which there were both conflictive demands, threats or deeds and cooperative proposals or offers by one or both sides.¹ Figures 5B and 5C below summarize the data on bargaining during the two crises.

Figure 5B

Bargaining during the Berlin Crisis

Period	Conflict Intensity	Duration of Bargaining Period, Days	Percent of Days with Bargaining
pre-crisis	very low	35	11
intensification	low to moderate	17	41
post-crisis	low	30	40

¹Similarly, Schelling (1966, pp. 135-36) has characterized conflict as a bargaining process involving threats, demands and proposals. He suggests that the essence of bargaining is the communication of intent through words and deeds.

Figure 5C
Bargaining during the Cuban Crisis

Period	Conflict Intensity	Duration of Bargaining Period, Days	Percent of Days with Bargaining
peak and reduction	high	10	90
reduction	moderate	17	47
post-crisis	low	8	50

The data for Berlin and Cuba suggest that frequent bargaining may be more likely in periods of high conflict intensity than in periods of low intensity. In the Berlin case, bargaining occurred on only two days of the 14-day crisis peak period.¹ Conflict intensity during this period may have been low enough so that neither side felt that active bargaining was necessary to avoid open hostilities. In contrast, the high frequency of bargaining during the Cuban crisis peak suggests that both sides recognized the danger inherent in a nuclear confrontation.

5.8 Deeds Supporting Statements of Intent and Desire

Conflictive Actions. In the Berlin crisis, neither side supported its demands and threats with conflictive deeds through May and most of June. From the end of June through September, however, both NATO and WTO generally made their conflictive words more credible with relevant deeds. In the Cuban crisis, the U.S. supported its demands and threats with corresponding deeds in the intensification and peak periods, but not during reduction. The U.S.S.R. did not support its relatively few threats and its single demand during the crisis with discrete conflictive deeds. In the Berlin case, both sides apparently felt it necessary to use both conflictive words and deeds to show their determination. In the Cuban crisis, the U.S.S.R. had made its position clear by the presence of its IREM's in Cuba; demands and threats were not necessary. The U.S.

¹The only cooperative actions during the period were WTO offers on August 16 and 25.

had to make its intentions credible on Cuba; it did so with a combination of intense demands, threats and conflictive deeds.

Cooperative Actions. In the Berlin crisis, neither side supported its proposals and offers with cooperative deeds in the peak and reduction periods, and in most of the intensification and post-crisis periods. In the first four days of intensification and early in the post-crisis period, both sides did support their proposals and offers with cooperative deeds. In the Cuban crisis, both the U.S. and the U.S.S.R. supported their proposals and offers by relevant cooperative deeds during the crisis peak and reduction periods.

In summary, both sides gave their proposals and offers greater non-verbal support on Cuba than on Berlin. This conclusion supports the observation in Sections 5.5 and 5.6 that both sides made a greater effort to cooperate on Cuba than on Berlin.

5.9 Action Diversity

The diversity of action types a party uses in an interaction situation may indicate how determined it is to achieve its objectives.

Conflictive Actions. During the Berlin crisis, both WTO and NATO used at least three different conflictive action categories on four different occasions to indicate the seriousness with which they viewed the Berlin conflict. On August 7, six days before it sealed the Berlin border, WTO used accusation, demand and threat to underscore its determination on Berlin.

In attempting to convey the seriousness with which it viewed the Cuban crisis, the U.S. used conflictive action in all four categories when on October 22 it announced the presence of Soviet IRBM's in Cuba and outlined the U.S. response. In addition to its conflictive deeds, the U.S. made frequent use of all three conflictive verbal categories between October 22 and 28 to emphasize its determination to have the IRBM's removed from Cuba. In contrast, the U.S.S.R. used more than two conflictive action categories only twice during the crisis--on September 11 and October 23.

Cooperative Actions. There were only two occasions during the Berlin crisis when more than two cooperative action categories were used simultaneously. On July 27, both WTO and NATO used three categories to indicate their interest in finding a Berlin solution; on September 19, the U.S.S.R. used three categories to show its interest in normalizing the Berlin situation.

In contrast, between October 24 and 31 during the Cuban crisis, the U.S.S.R. used three cooperative action categories several times to convey its interest in achieving a solution to the Cuban crisis. During the same period, the U.S. used all four cooperative categories to indicate the importance it attached to reaching a settlement.

The frequency with which NATO and WTO used a diversity of cooperative action categories during the two crises supports the conclusions in Sections 5.5, 5.6 and 5.8 that both sides made a greater effort to cooperate on Cuba than on Berlin.

5.10 Words as Predictors of Deeds

Using the Berlin and Cuban material, this section examines the following general hypotheses:

The higher the intensity of an actor's statements of intent relative to statements of desire and evaluation, the greater the probability it will carry out deeds to achieve its desired objectives. Statements of desire accompanied by corresponding statements of intent of comparable or higher intensity are more likely to be followed by corresponding deeds than statements of desire unaccompanied by statements of intent.

Conflictive Actions. The preceding hypotheses are restated and examined below for conflictive actions during the Berlin and Cuban crises.

The higher the intensity of threats relative to demands and disapproval, the greater the probability that corresponding conflictive deeds will follow. Demands accompanied by supporting threats of comparable or higher intensity are more likely to be followed by corresponding conflictive deeds than demands unaccompanied by threats.

In the Berlin crisis, an increase in the frequency and intensity of NATO threats in late June and mid-July was followed by conflictive deeds in mid- and late July and early August. A sharp increase in WTO threat intensity

in late July and early August was followed by the sealing of the Berlin border on August 13. Low NATO threat intensity relative to demand intensity in the peak period corresponded to the absence of any NATO action to counter the border sealing.

In the Cuban crisis, threats and warnings by both sides between August 28 and September 28 were followed by corresponding deeds in September and October. In the crisis peak and reduction periods, the U.S. continued to support and follow its threats with conflictive deeds. The U.S.S.R., however, used no threats or warnings between September 28 and mid-November; it yielded on the IRBM issue on October 28 and the bomber issue on November 20.

In both crises, both sides made threats in the early periods that were followed by corresponding conflictive deeds. In both crises, one side then shifted from relatively high to relatively low or zero threat intensity and later abstained from conflictive deeds that would have corresponded to its earlier threats. Thus in the pre-crisis period of Berlin, NATO used threats or warnings on 12 different days regarding its determination to defend Western access to Berlin. Between July 20 and August 23, however, NATO used threats or warnings only four times; these threats averaged only -16 in intensity. By its shift to a relatively low threat intensity, NATO may have signaled in advance that it would take no action to counter the Berlin border sealing on August 13.

In the Cuban crisis, the U.S.S.R. used threats or warnings of moderate intensity four times between August 28 and September 28. In these statements, the U.S.S.R. said that a U.S. attack on Cuba would mean war with the Soviet Union. The absence of Soviet threats after September 28 may have indicated in advance that the U.S.S.R. would remove its IRBM's from Cuba when faced with the possibility of a U.S. air strike on October 27.

Cooperative Actions. The hypotheses at the beginning of this section are restated and examined below for cooperative actions during the Berlin and Cuban crises.

The higher the intensity of offers relative to proposals and approval, the greater the probability that corresponding cooperative deeds will follow. Proposals accompanied by supporting offers of comparable or higher intensity are more likely to be followed by corresponding cooperative deeds than proposals unaccompanied by offers.

In the Berlin crisis, both sides made offers in late June that were followed by corresponding deeds in late July. In late September and October, both sides again followed offers with relevant deeds. During the peak of the Cuban crisis, both sides made frequent offers that were followed by corresponding cooperative deeds. During reduction, Soviet offers remained high in intensity and were followed by corresponding cooperative deeds. In both crises, a high intensity of offers relative to proposals preceded cooperative deeds.

To summarize, the Berlin and Cuban crises offer substantial evidence that the type and intensity of conflictive and cooperative words a party uses at a given time can indicate the probability that corresponding deeds will follow.

5.11 Initiative-Response Sequences

The charts in Parts 3 and 4 above can be used to examine the nature of interaction sequences between East and West during the Berlin and Cuban crises. Examination can show whether initiatives and responses were conflictive or cooperative, whether a response was more hostile or more friendly than the initiative, and how much time elapsed between initiative and response.

The author found 35 action initiatives in the Berlin data, and 14 initiatives in the Cuban data for which responses could be clearly identified. Each initiative-response sequence consisted of a WTO or NATO initiative followed by a NATO or WTO response. The initiative-response sequences analyzed are identified on the charts in Parts 3 and 4 by numbers in parentheses. Numbers without asterisks on the charts indicate initiatives; numbers marked with asterisks are responses.

Initiatives. The charts in Part 3 indicate that WTO precipitated the Berlin crisis and continued to initiate conflictive action sequences throughout the crisis. Nearly all WTO and NATO initiatives on Berlin were conflictive. The charts in Part 4 show that the U.S.S.R. precipitated the Cuban crisis with a series of conflictive deeds, but then shifted to cooperative initiatives in the crisis peak. All U.S. initiatives on Cuba were conflictive.

Responses. In the Berlin crisis, NATO responses to WTO initiatives favored de-escalation except during late August, mid-October, and late November through December. WTO responses to NATO initiatives alternated between de-escalation and escalation. In the Cuban crisis, U.S. responses to Soviet initiatives favored de-escalation in early September and after October 27. With one exception, however, U.S. responses favored escalation from September 25 through October 27. With one exception, Soviet responses to U.S. initiatives on Cuba all tended toward de-escalation.

Time Lag Between Initiative and Response. Figure 5D below gives the average time lag in days between initiative and response during the Berlin and Cuban crises.

Figure 5D

Average Number of Days Between Initiative and Response
during the Berlin and Cuban Crises

Period	Berlin	Cuba
pre-crisis	2.2	3.0
intensification	0.3	2.8
peak	0.4	1.0
reduction	5.3	1.2
post-crisis	1.4	... ^a

^aThere were no initiative-response sequences identified for Cuba in the post-crisis period.

In general, the data suggest that the initiative-response time lag may be shorter during crisis peaks than during other periods.

In the Berlin crisis, the initiative-response time lag was significantly shorter during the intensification and peak periods than in the other periods. For Cuba, the lag was significantly shorter during the peak and reduction periods than earlier. The data suggest that for Berlin, interaction intensity was greater during intensification than during reduction; whereas for Cuba, intensity was greater during reduction than during intensification.

The elapsed time between initiatives and responses may be a measure of how seriously parties are trying to escalate or de-escalate a crisis. A short time lag between an initiative and a conflictive response may indicate that the respondent is trying to escalate a crisis; a short lag between an initiative and a cooperative response may show that the respondent desires de-escalation.

For Berlin, two of the five responses in the peak period and three of the four responses during reduction favored de-escalation. For Cuba, two of the three responses in the peak period and all four responses during reduction favored de-escalation. For Berlin, the average time lag between initiative and response during reduction was 5.3 days; for Cuba this lag was only 1.2 days. Taken together, these observations suggest there was a greater commitment to de-escalation on Cuba than on Berlin. This conclusion is congruent with the conclusions in Sections 5.5, 5.6, 5.8 and 5.9 that both sides made a greater effort to cooperate on Cuba than on Berlin.

5.12 Cooperation and Conflict over Berlin and Cuba:

A Summary

As the reader will recall, underlying this study is the following assumption: If parties have both common and conflicting goals, they may be able to cooperate during periods of intense conflict.

In the Berlin crisis, however, there was little cooperation during the crisis peak; most cooperation occurred before and well after the peak period. Before the East sealed the Berlin border, both sides apparently believed there was some chance of reaching a solution of the Berlin problem. During intensification, simultaneous conflict and cooperation (i.e., bargaining) did occur. The sealing of the border, however, apparently precluded further cooperation and bargaining until the post-crisis period. The border sealing left little over which to bargain: The danger of fighting over Berlin apparently was not great enough to foster East-West cooperation to avert war. The peak and reduction periods of the Berlin crisis resembled a zero-sum situation in which the East gained what the West lost--i.e., control of East Berlin. Not until the post-crisis phase

were common interests reasserted to allow cooperation toward normalizing East-West relations over Berlin and Germany.

During the Cuban crisis, there was little cooperation before the crisis peak, but substantial cooperation and bargaining in the peak, reduction and post-crisis periods. In the Cuban situation, there were no important objectives held in common by East and West before the introduction of Soviet missiles in Cuba. When the U.S. discovered the presence of Soviet IRBM's in near-operational status, however, the specter of nuclear war suddenly appeared. Both sides then shared the paramount goal of preventing war; relatively intense bargaining and cooperation ensued. The crisis peak and reduction periods of the Cuban crisis resembled a non-zero-sum situation in which conflicting objectives (including military and political goals) were offset by the common objective of preventing a nuclear exchange. Both sides gained something through cooperation to resolve the Cuban situation. The U.S. persuaded the U.S.S.R. to remove its missiles and bombers from Cuba; the U.S.S.R. gained at least a temporary U.S. pledge not to invade Cuba.¹

5.13 Summary of Interaction Indicators:
Implications for Crisis Prediction
and Management

The indicators employed in this study to analyze East-West interaction over Berlin and Cuba could be used to forecast short-term trends of conflict and cooperation in the international system. The indicators may be useful for predicting the development of international crises, and for controlling the level of conflict and cooperation during a crisis.

The six indicators used in the study are summarized below. Each indicator measures some aspect of an actor's intent to achieve an objective or goal. For each indicator, the author has suggested what aspect of intent it

¹The author is indebted to Professor Raymond Tanter for pointing out the zero-sum and non-zero-sum aspects of the Berlin and Cuban crises, as well as the relevance to Berlin and Cuba of Thomas Schelling's (1960, 1966) insights on cooperation and bargaining during conflicts.

might reveal, and how it might be used in crisis prediction and management.

1. The diversity of action types an actor uses may give a generalized indication of the actor's intent to achieve its goal, without necessarily suggesting whether the actor will carry out statements of intent or use deeds to attain its objective.

For example, an actor's simultaneous use of disapproval, demand, threat and conflictive deeds may indicate strong determination to achieve its goal (Section 5.9).

2. The intensity of related deeds accompanying statements of desire and intent may indicate how much effort and what resources an actor is willing to use to make its intent credible to a target, without necessarily suggesting whether statements of intent will be carried out.

For example, if an actor's threats are accompanied by supporting conflictive deeds, there may be a high probability that the actor's threats will be credible to an opponent (Section 5.8).

3. The resource-area an actor uses in its actions indicates what resources the actor is willing to employ, and may indicate the actor's determination to achieve its goal.

For example, the use of military actions may show a greater willingness to expend physical resources than the use of political or diplomatic actions, and thereby reflect a strong determination to achieve a goal (Section 2.3, 5.3).

4. The type and intensity of response by an actor to a previous action initiative may indicate the actor's willingness to escalate or de-escalate a conflict situation--i.e., to use higher or lower intensity conflictive actions to achieve its goal.

For example, if an actor responds to conflictive words with a conflictive deed of higher intensity, it may be indicating its desire to escalate a conflict situation. If an actor responds to conflictive words with conflictive words of lower intensity, it may be signaling its desire for de-escalation (Section 5.11).

5. Elapsed time between an initiative and an actor's response may indicate the actor's determination to achieve its goal.

For example, if an actor responds immediately to an action initiative, it may show greater determination to achieve its goal than if it delays its response (Section 5.11).

6. The intensity of an actor's statements of intent relative to its statements of desire and evaluation may indicate the probability that the actor will carry out its statements of intent in the future--i.e., the probability that it will follow its statements of intent with corresponding deeds to achieve its goal.

For example, if the intensity of an actor's threats is high relative to demands and disapproval, there may be a high probability that the actor will carry out its threats (Section 5.10).

Each of these indicators may reveal some aspect of an actor's intent. Used in combination, the indicators may predict the general nature of an actor's future behavior. For example, suppose that an actor:

maintains a high intensity of threats relative to demands and disapproval,

accompanies its threats by relevant conflictive deeds involving military resources, and

responds to conflictive initiatives rapidly and with higher intensity conflictive deeds.

In this case, there may be a high probability that the actor intends to use high intensity conflictive deeds and expend valuable physical resources (e.g., men, military equipment) to achieve its goal.

As a second example, suppose that an actor:

maintains a low intensity of threats relative to demands and disapproval, accompanies its threats by deeds involving diplomatic and political resources, and

responds to conflictive initiatives slowly and with equal or lower intensity conflictive words.

In this case, there may be a low probability that the actor intends to use high intensity conflictive deeds and expend valuable physical resources to

achieve its goal. The actor may be more likely to use non-material resources and conflictive words rather than deeds to further its objectives.

In summary, use of the above indicators to monitor interaction between nations may improve an analyst's ability to do the following:

1. Anticipate future actions by an opponent.
2. Anticipate likely responses by an opponent to his country's possible actions.
3. Anticipate the development of crises.
4. Control the level of conflict and cooperation during a crisis.
5. Forecast patterns of conflict and cooperation in the international system.¹

¹The author is grateful to Professor Raymond Tanter for suggesting ways in which the above indicators might be used in crisis anticipation and management.

REFERENCES

- Bales, Robert F. Interaction Process Analysis: A Method for the Study of Small Groups. Reading, Mass.: Addison-Wesley, 1951.
- Benson, Oliver. "A Simple Diplomatic Game." In James N. Rosenau (ed.), International Politics and Foreign Policy. New York: Free Press, 1961.
- _____. "Simulation of International Relations and Diplomacy." In Harold Borko (ed.), Computer Applications in the Behavioral Sciences. Englewood Cliffs, N.J.: Prentice-Hall, 1962.
- Corson, Walter H. "United States-Soviet Interaction, 1945-1965: A Quantitative Analysis." Department of Social Relations, Harvard University, June, 1968.
- _____. "Measuring Conflict and Cooperation Intensity in East-West Relations: A Manual and Codebook." Institute for Social Research, The University of Michigan, January, 1970.
- Deadline Data on World Affairs. 1961-1962.
- Deutsch, Karl W. "Power and Communication in International Society." In Ciba Foundation (A. de Reuck and J. Knight [eds.]), Conflict in Society. Boston: Little, Brown, 1966.
- Fitzsimmons, Barbara, Gary Hoggard, Charles McClelland, Wayne Martin and Robert Young. World Event/Interaction Survey Handbook and Codebook. Technical Report #1, World Event/Interaction Survey. Department of International Relations, University of Southern California, January, 1969.
- Gross, Feliks. World Politics and Tension Areas. New York: New York University Press, 1966.
- Holsti, Ole R., Richard A. Brody and Robert C. North. "Measuring Affect and Action in International Reaction Models: Empirical Materials from the 1962 Cuban Crisis," Journal of Peace Research, 1964, 3-4, 170-90.
- Iklé, Fred C. How Nations Negotiate. New York: Harper and Row, 1964.
- Kahn, Herman. On Escalation: Metaphors and Scenarios. New York: Praeger, 1965.
- Larson, David L. (ed.). The "Cuban Crisis" of 1962: Selected Documents and Chronology. Boston: Houghton-Mifflin, 1963.

- McClelland, Charles A. "Access to Berlin: The Quantity and Variety of Events, 1948-1963." In J. David Singer (ed.), Quantitative International Politics: Insights and Indicators. New York: Free Press, 1968.
- _____, Daniel P. Harrison, Wayne R. Martin, Warren R. Phillips, and Robert A. Young. The Communist Chinese Performance in Crisis and Non-Crisis: Quantitative Studies of the Taiwan Straits Confrontation, 1950-1964. School of International Relations, University of Southern California, December, 1965.
- Mezerik, Avrahm G. (ed.). "Berlin and Germany: Cold War Chronology," International Review, 8, 71 (1962).
- Moses, Lincoln E., Richard A. Brody, Ole R. Holsti, Joseph B. Kadane, and Jeffrey S. Milstein. "Scaling Data on Inter-Nation Action," Science, 156, 3378 (May 26, 1967). 1054-59.
- New York Times. 1961-1962.
- Nordheim, Erik V. and Pamela B. Wilcox. "Major Events of the Nuclear Age: A Chronology to Assist in the Analysis of American Public Opinion." Oak Ridge, Tennessee: Oak Ridge National Laboratory, August, 1967.
- North, Robert C., Ole R. Holsti, M. George Zaninovich, and Dina N. Zinnes. Content Analysis: A Handbook with Applications for the Study of International Crisis. Evanston: Northwestern University Press, 1963.
- Richman, Alvin. A Scale of Events Along the Conflict-Cooperation Continuum. Research Monograph Series Number 10, Foreign Policy Research Institute, University of Pennsylvania, March, 1967.
- Rummel, Rudolph J. "Dimensions of Conflict Behavior Within and Between Nations," General Systems Yearbook, 8 (1963), 1-50.
- _____. "A Foreign Conflict Behavior Code Sheet," World Politics, 18, 2 (January, 1966), 283-96.
- Schelling, Thomas C. The Strategy of Conflict. Cambridge: Harvard University Press, 1960.
- _____. Arms and Influence. New Haven: Yale University Press, 1966.
- Soott, Andrew M. The Functioning of the International Political System. New York: Macmillan, 1967.
- Sellin, Thorsten, and Marvin E. Wolfgang. The Measurement of Delinquency. New York: Wiley, 1964.

Stevens, S. S. "Mathematics, Measurement, and Psychodynamics." In S. S. Stevens (ed.), Handbook of Experimental Psychology. New York: Wiley, 1951.

_____. "A Metric for the Social Consensus," Science, 151, 3710 (February 4, 1966a), 530-41.

_____. "On the Operation Known as Judgment," American Scientist, 54, 4 (December, 1966b), 385-401.

Stone, Philip J., Dexter C. Dunphy, Marshall S. Smith, and Daniel M. Ogilvie. The General Inquirer: A Computer Approach to Content Analysis. Cambridge: M.I.T. Press, 1966.

World Almanac and Book of Facts. 1961-1963. New York World-Telegram Corporation.